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Table of Contents

Vol. 38, No. 10 — July 20, 1939

News Developments

Summary ... 13
Sparks From the News ... 14
Eyes of Industry Turned on Louisiana ... *Neil Williams* 15
California Situation Somewhat Improved ... *L. P. Stockman* 16
Illinois Future Indicated by Other Wide Open Fields ... *James McIntyre* 17
Stanolind Surveys Line to Salt Lake City ... *T. R. Ingram* 18
Search for Petroleum in Great Britain Continues ... *L. David Wosk* 19
Kansas May Use Acreage Factor ... *Harry F. Simons* 21
News From State Capitals ... 22
Editorial: Pipe-Line Year ... 23
Obituaries ... 24
No New Policy on Oil Prices Indicated by Federal Suits ... *Henry D. Ralph* 25
Bureau of Mines Reports Highly Favorable Demand ... 26
International News ... 27
Gulf Coast Field Opened on Soil Survey Information ... *D. H. Stormont* 28
Natural Gas News ... 30
Natural Gasoline ... 30
Refinery Activity ... 31
Pipe Line ... 31
Program Page ... 32

Engineering—Operating

Theories and Practices in Modern Oil Well Shooting ... *R. B. Bossler* 34
Operating Ideas ... 39
Drilling Time Data in Rotary Practice—Part 2 ... *P. B. Nichols* 40
Safety—Mud Box Prevents Derrick Accidents ... 43
Production and Development Controlled at Magnolia ... *George Weber* 44
Progress in Metals ... *W. L. Nelson* 49
Progress Report of A.P.I. Drilling Practice Committee ... 50
Questions on Technology ... *C. K. Francis, Ph.D.* 54

Field Operations

Field Operations Summarized ... 57
Illinois-Kentucky-Indiana ... 59
Kansas and Missouri .. *Dal Dalrymple* 61
Gulf Coast ... *Neil Williams* 62
Among Drilling Contractors ... 64
Oklahoma ... *Dal Dalrymple* 66
Southwest Texas ... *F. L. Singleton* 69
Louisiana and Arkansas .. *George Weber* 70
Michigan ... *Otto C. Pressprich* 72
California ... *L. P. Stockman* 74
North and East Texas *D. H. Stormont* 77
Rocky Mountain Area ... *T. R. Ingram* 78
Canada ... 81
West and Central Texas and Panhandle ... *D. H. Stormont* 82
Key to Abbreviations ... 87
Wildcats ... 87
Eastern Fields ... *Staff Correspondent* 88

Markets and Prices

Group 3 Market ... *T. F. Smiley* 96
A.P.I. Refinery Report ... 97
New York Market .. *H. Stanley Norman* 97
Tank-Wagon Market ... 98
Refinery Prices ... 99
Crude Oil Prices ... 103
New York-Pennsylvania Gas Fields ... 104

Additional Features

Monthly Field Summary ... 85
Personal Paragraphs ... 94
Record of Oil Securities ... 100
Equipment News ... 101
Classified Advertising ... 102
Advertisers' Index ... 104

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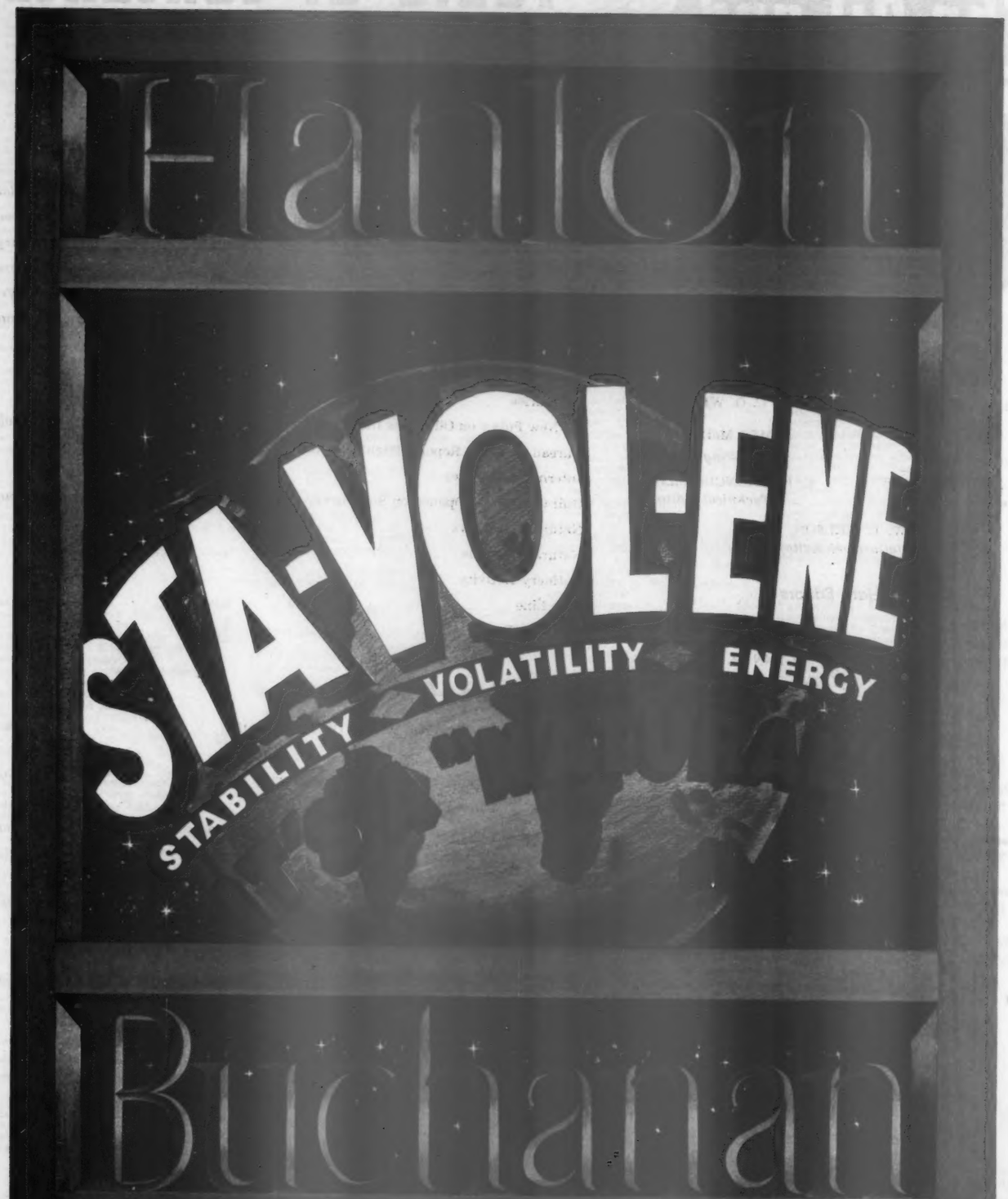
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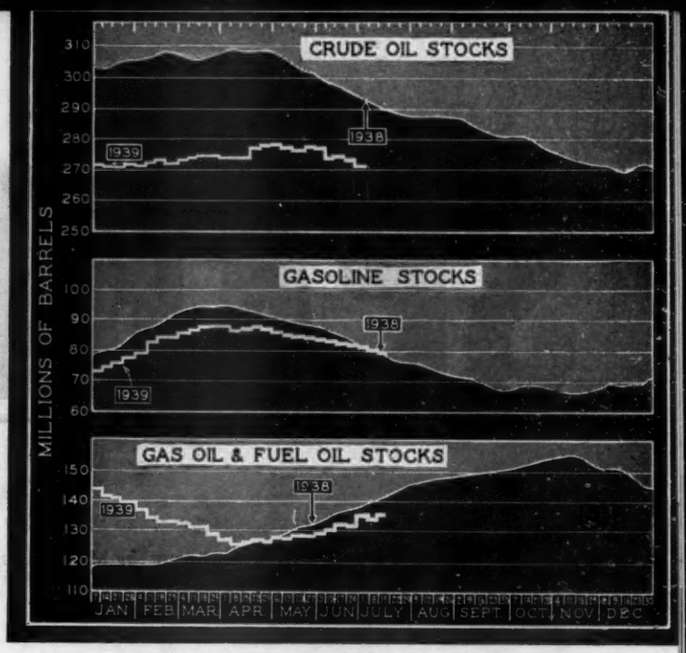
Trends

Heavy Consumption Furnishes Base for Sustained Recovery



THERE was scattered evidence of improvement in both crude oil and refinery markets over the past week. This improvement had not gone far enough to assure a definite trend upward but it did indicate an underlying strength which could furnish the basis for permanent recovery. The week's developments reflected the strong product demand rather than any curtailment in supply brought about by reductions in crude oil production or crude runs to stills. Some of the weak spots in the gasoline market have been strengthened by a demand which apparently is bearing out the most optimistic predictions. Many sellers who had distress material on hand have found outlets and continued heavy shipments are assured for the remainder of the month and during August.

CRUDE PRODUCTION *3,534,137 bbl. daily average—down 8,536 bbl. One year ago 3,326,928 bbl.*

CRUDE STOCKS *271,567,000 bbl. as of July 1—down 730,000 bbl. One year ago 291,666,000 bbl.*

GASOLINE STOCKS *79,416,000 bbl. as of July 15—down 1,407,000 bbl. One year ago 78,693,000 bbl.*

GAS AND FUEL OIL STOCKS *136,485,000 bbl. as of July 15—up 1,318,000 bbl. One year ago 140,628,000 bbl.*

REFINERY RUNS *3,390,000 bbl. daily week ending July 15—down 30,000 bbl. One year ago 3,221,000 bbl.*

In regard to gasoline, those who analyze car sales and registrations have data which point conclusively to continued increases in motor fuel demand over the same period last year through the remainder of 1939. They also have reports covering sales of oil burners, Diesel engines and activity of the marine trade which assure an expanding demand over the next several months for light and heavy fuels. With this information at hand they anticipate that comparative consumption figures for the last half of the year will be practically as favorable as those for the first half. The latest Bureau of Mines report, the details of which will be found on Page 26 of this issue, shows that gasoline consumption is running better than 5 per cent ahead of last year with gains in the other products ranging from 8 to 16 per cent over the same period in 1938.

Whether or not the industry will benefit from this highly favorable demand, market students agree, is entirely dependent on the control of supply during the next few months. They contend current statistics clearly show that production and refinery operations have been at too high a level since the first of the month.

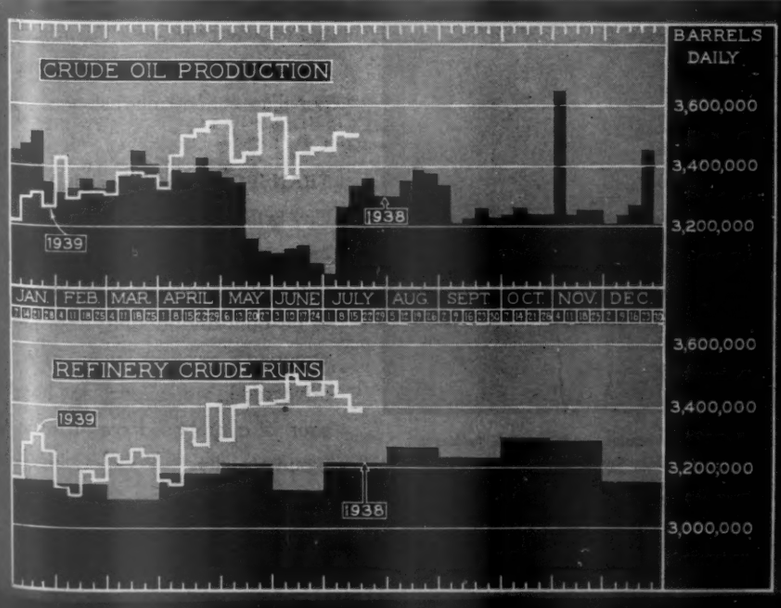
While the peak demand is helping the gasoline market in several refining and shipping centers, these observers point out that the main consuming season is half over and there is an obvious need to curtail plant operations in order to assure a more rapid reduction in gasoline stocks. Otherwise, the industry will enter the fall season with burdensome inventories.

A well-balanced operation will bring recovery in gasoline tankcar and tanker markets. These advances, if sustained, will be reflected in wholesale and retail prices.

Finally it is pointed out that this is not a program of operations which can be carried through to fulfillment in 1 month of curtailed operations. It assumes a projection of operations based on demand and inventory conditions which will continue through the remainder of the year with all areas doing their proportionate part.

DAILY AVERAGE PRODUCTION FOR WEEK

	July 15, 1939	Bur. Mines July est. of demand	July state allowables	July 8, 1939
Oklahoma City	102,025	.....	.....	103,900
Seminole fields	46,825	.....	.....	47,625
Remainder of state	306,550	.....	.....	312,900
Total Oklahoma	455,400	456,100	428,000	464,425
East Texas	373,097	.....	.....	373,000
West Texas	236,398	.....	.....	227,398
North Central Texas	118,650	.....	.....	119,058
Texas Panhandle	58,348	.....	.....	83,347
East Central Texas	93,698	.....	.....	101,040
Gulf Coast Texas	348,648	.....	.....	347,297
Southwest Texas	96,896	.....	.....	96,546
Total Texas	1,325,735	1,426,500	1,355,598	1,347,686
North Louisiana	71,740	.....	.....	71,705
Gulf Coast Louisiana	204,100	.....	.....	203,048
Total Louisiana	275,840	264,500	263,023	274,753
California	626,500	595,200	595,000	604,750
Kansas	166,750	160,300	165,890	167,600
Arkansas	61,390	53,900	57,641	59,540
Eastern fields	97,300	105,900	.....	97,900
Illinois	265,693	187,400	.....	261,115
Michigan	67,549	53,200	.....	69,126
New Mexico	115,950	116,100	113,000	115,940
Rocky Mountain area	76,080	94,100	.....	79,890
Total United States	3,534,187	3,513,200	.....	3,542,725



SPARKS . . . FROM THE NEWS

SPURT: Exploration in the Kansas sector of the Forest City basin, delayed while a score of tests were begun in Missouri, spurted last week with the starting of six wildcats.

OFF THE SPOT: When markets went haywire, the accusing finger used to be pointed at small refiners in the Mid-Continent. Now the finger has shifted to large refiners in other areas.

BOILING POINT: The temperature was only 98 in Oklahoma City Monday, but it was boosted toward the boiling point by 700 irate parents who turned the heat on the school board to prevent drilling a well on an elementary school campus.

MILK vs. OIL: Government's spectacular antitrust suit, against Chicago milk distributors, is thrown out of court on grounds that Agriculture Department sanctioned price fixing and production control; but a similar plea regarding control failed the oil industry at Madison.

TALKING ENDS: They have been talking a long while about revising Kansas' conservation regulations. Next week, important changes are to be aired at a hearing.

END POLLUTION: Pollution bill of type advocated by oil industry and already passed by Senate is scheduled for early House approval, which would end long controversy.

WINTER PREPAREDNESS: Connections now being made between new distributing points and trunk lines assure more natural gas will be consumed next winter than ever before.

OVERKIND: Scrutinizing gasoline taxes imposed by other states, North Dakota legislators, with their 3-cent levy, concluded they were too good-natured. So July 1 they added a cent.

AUTOBAROMETER: An increase of 57 per cent in factory sales of cars and trucks in the first half of the year is interesting in view of the role of the automotive industry as a barometer of business.

HIGHWAY FREIGHT: A depression-born industry that helped increase the use of petroleum products is that of inter-city trucking. Two hundred thousand trucks now haul 5 per cent of the nation's freight.

MAN-BEHIND-THE-PLOW: If Mr. Ford's prediction that his new tractor will drive the mule from the furrow just as surely as the automobile has driven Dobbin from the streets proves true, the oil industry will be one of the principal beneficiaries.

POOR START: Louisiana's new records in crude oil production the past 2 weeks are getting the state's new oil administration off to a poor start.

THE EVIDENCE: How little official Washington knows regarding causes of present unsatisfactory conditions is reflected in proposal to stiffen antitrust acts.

TRANSPORTATION: Salt Lake City is the industry's largest refining center without water or pipe line connections. A pipe line is to be built and judging from the waterway projects now being advocated we expect to hear soon of a proposed canal to the mountain city.

DRILLING IN THE MOSS COUNTRY . . .

Drilling rig amidst oaks laden with Spanish moss on the Jefferson Island salt dome, Iberia Parish, Louisiana. Texas Co. No. 2 Salt Mine

Eyes of the Oil Industry Turned on Louisiana

By NEIL WILLIAMS

WHILE the petroleum industry awaits developments of the "private" investigation of Gov. Earl K. Long into the affairs of the Louisiana Department of Conservation, and of the impending investigation into oil activities in that state, oil production of coastal Louisiana, one of the focal points in the general situation, continues to mount. Unless, as an outgrowth of these investigations, regulatory practices are imposed, there is little indication of any early break in this upward trend of production.

The private check of Governor Long into the Department of Conservation may lead to new policies in the control of oil and gas production. Already, the dismissal of Dr. J. A. Shaw, supervisor of the minerals division, and the appointment in his place of David McConnell, director of the Shreveport district, have been announced.

The federal Government is entering the picture with the establishment by the Department of the Interior of investigating offices at New Orleans to check Louisiana oil shipments with a view of determining if the Connally act is being violated. This was announced by Secretary Ickes.

Clifford C. Rowland, senior examiner, will be in charge of the New Orleans inquiry. Secretary Ickes said Rowland's principal duty would be "to check all shipments of petroleum from Louisiana ports in interstate and foreign commerce and intermediate shipments to such ports to make certain that the oil thus shipped was produced in accordance with the laws of Louisiana and the orders of the Louisiana Department of Conservation."

Mr. Ickes said he had discussed establishment of the office with Attorney General Murphy and that Rowland and his staff would cooperate with the federal Bureau of Investigation and with federal Attorney Rene A. Viosca. Any violations of the oil law will be reported to the attorney general for action, he said.

Governor Long said he welcomed a federal investigation of Louisiana's oil industry.

Attorney General Frank Murphy announced at Washington that federal investigators would be sent to Louisiana to probe oil activities, in addition to possible mail frauds, income tax evasions and federal-financed works project diversions.

The leniency displayed by state conservation officials in allocation of production continues a major factor in Louisiana. With prospects for comparatively high per well allowables, operators are inspired to increased wildcatting and development. Although allocations have been materially reduced over what they have been in previous years, they still exceed allowances in neighboring states.

On the most recent allowable schedule (effective July 1) by the Department of Conservation, 10 fields had allocations in which production per well would average above 300 bbl. In one field, Raceland, the allocation would permit an average daily production of 600 bbl. per well. Allowable production of these 10 fields represented a total of 42,155 bbl. out of the total of the 201,610 bbl. granted the district.

Fields in which per well allowables will average 300 bbl. or more on the July schedule are:

Field—	Field allocation (bbl.)	No. wells	Average per well (bbl.)
Raceland	1,800	3	600
Lafitte	15,000	29	517
Creole	1,800	4	450
Chacahoula	1,200	3	400
Grand Lake	400	1	400
Caillou Island	14,850	40	371
St. Martinsville	630	2	315
Darrow	3,150	10	315
Quarantine Bay	2,425	8	303
Bateman Lake	900	3	300
Total	42,155	103	409

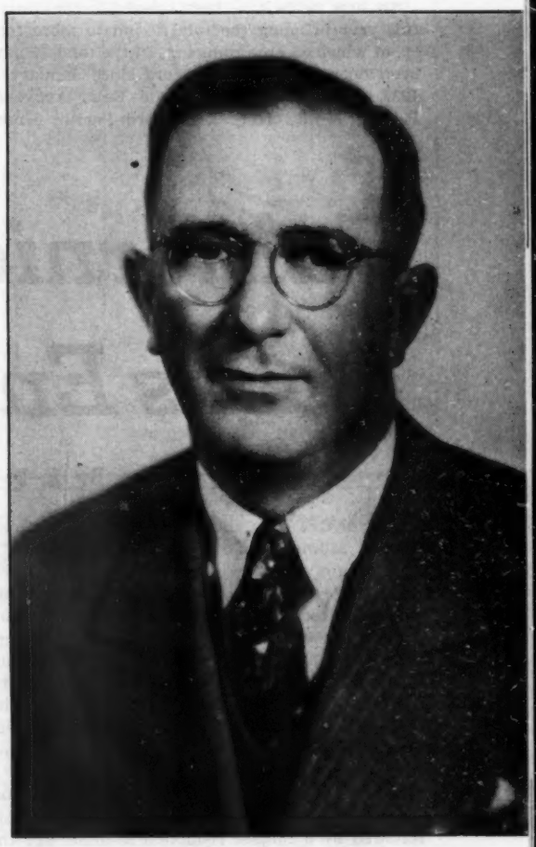
There are 14 additional fields, representing a total allocation of 43,800 bbl., in which the average production figures more than 200 bbl. per well. Average allowable per well for the entire district is approximately 145 bbl.

In granting comparatively high allowables, the conservation officials follow the policy of taking into consideration the fact that many of the newer fields are in swamps or isolated marsh or water locations where problems and hazards occasion excessively high drilling and completion costs, prohibitive without reward of higher allowables, also in most of these fields spacing usually is limited to 20 acres and in many instances to 40 acres.

Twelve fields in the district now have daily production of 5,000 bbl. or more, being led by the Jennings field with present production of 24,850 bbl. These fields in the order of their production are:

Field—	Daily production	No. wells
Jennings	24,850	139
Lafitte	14,990	29
Caillou Island	14,850	40
Iowa	13,120	48
New Iberia	12,610	49
Villa Platte	9,400	48
Charenton	6,830	61
Gillis	5,950	53
Jeanerette	5,750	23
Tepetate	5,500	52
East Hackberry	5,210	50
Sulphur	5,120	60
Total	124,180	652

Daily production now is above 200,000 bbl. and the peak has not been reached. Since the first of the year the daily output has gained more than 30,000 bbl.



DAVID McCONNELL

Appointed director of the minerals division of the Louisiana Department of Conservation

Wildcat exploration and drilling, now more active and widespread than ever, is increasing. New fields are being opened in almost routine succession. Each field opened, each new sand proved and each extension promises further gains in output.

The threat of greatly increased production which coastal Louisiana holds over the industry is being magnified by the development of such fields as

Drilling in the Eola field, Avoyelles Parish, Louisiana, where indications point to the development of one of the Gulf Coast's most important fields

Eola and Golden Meadows. Although a set-back has been experienced lately at Golden Meadows, it still is regarded as one of the most important fields in several years. Eola is beginning to make itself felt in the production column.

More than 140 drilling rigs, the greatest number on record, are running in the district. Prospects for a continued increase are seen with the impending intensive wildcatting and development play along the Sparta-Wilcox trend.

The number of producing wells has shown a net gain of more than 365 since the first of the year, bringing the total to more than 1,425. Completions have been scattered over many fields, with no sizeable local concentrations of drilling.

Six new fields have been opened in the district this year bringing the total found to more than 90, of which 85 are producing. Of the total 40 have been opened in the 2½ years since January 1, 1937. Fields this year include, Eola, Avoyelles Parish; Kenilworth, St. Bernard Parish; Grand Lake, Cameron Parish; LaPice, St. James Parish; Paradis, St. Charles Parish; and Bell, Allen Parish. So far Eola is the only one in which sufficient development has been done to give definite indications of its potentialities.

With the large number of fields that have been and still are being opened, more rapid increase in production is being forestalled by the fact that producing sands in many are found only at deep levels, which with the remote and difficult locations of some of the fields tends not only to restrict drilling to necessary wells but to limit the rapidity with which the wells can be completed. Also the ownership of most of these fields is in such controlled hands that well-planned, consistent development programs can be carried out. Had it not been for these factors it is probable coastal Louisiana today would be presenting a bigger problem to the industry than it is, unless by more hurried development the potentialities might have been exploited earlier.

California Situation Looks Encouraging

By L. P. STOCKMAN

LOS ANGELES, Calif., July 17.—Comparatively smooth sailing should mark the course of the California oil industry during the next 3 months, but a long-range view is complicated by many uncertain factors. The future offers some encouragement, however, provided production is kept within limitations and marketers dispose of surplus production in foreign markets and on the Atlantic seaboard. Obviously, this precludes increased prices for California. After storing over 30,000,000 bbl. of crude and refined oil, California marketers expect to reduce stocks for about 5 months this year. The first substantial draft occurred during May, a reduction of 745,470 bbl., followed by a further reduction in June. For the first time in many years practically all operators are of opinion that drilling operations must be kept at the lowest possible rate.

Offshore Shipments

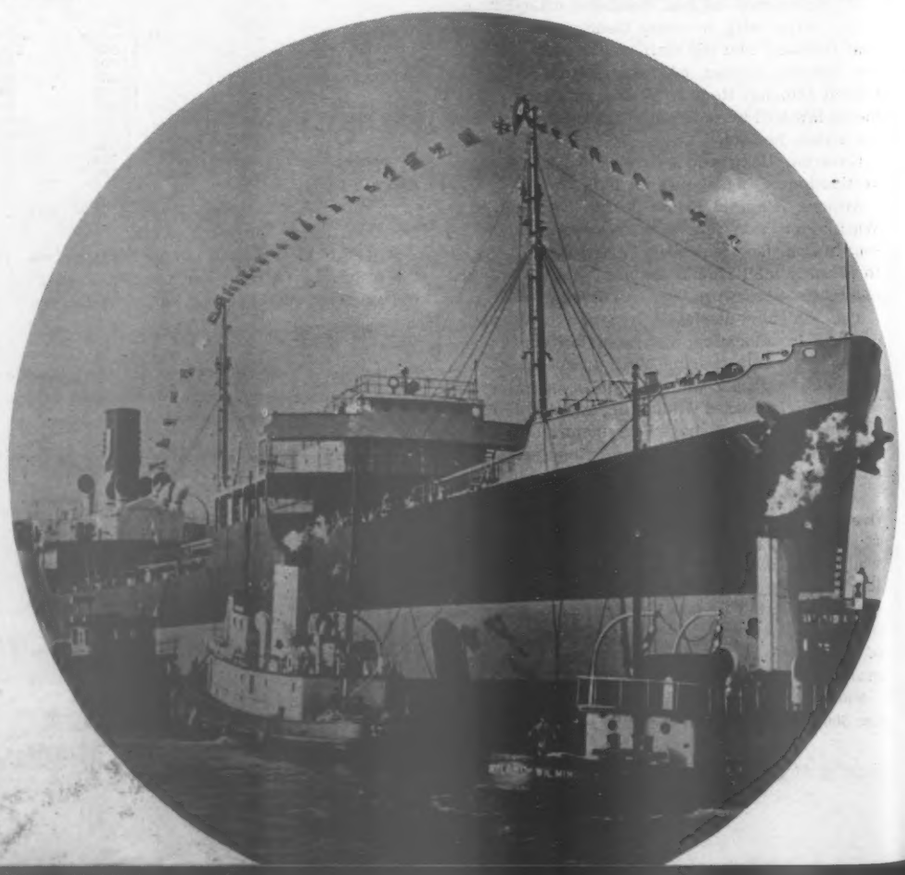
Comparison of export shipments to Japan between 1925 and 1939 indicates the importance of this market as a balancing outlet. The Japanese market has reduced purchases of crude oil and has increased liftings of fuel oil, gas oil and distillates. This shift is due to fuel oil, gas oil and Diesel oil prices having been reduced last year whereas crude oil prices remained unchanged. There is very little profit for California marketers in shipments to Japan due to competitive conditions and the necessity of dumping excess production. The only real profit in many cases is the pipe-line charge made for moving the crude from the fields to tidewater.

All crude oil or products sold to Japanese buyers is on the basis of cash on the barrel-head or negotiable letters of credit. This is necessary as operators are paid in full not later than the 25th day of the month following pipe-line deliveries. It also places a burden on the buyers. Adverse credit balances further complicate matters. Within the past month or so Japanese buyers have been forced to relinquish all foreign charters and ordered to use Japanese tankers. An edict has been issued in Japan prohibiting construction of any additional tankers, reflecting the inability of Japan to purchase scrap iron. Return of the United States fleet to Pacific waters will augment sales of fuel oil, Diesel oil, lubricating oil and gasoline, no small factor as approximately 10,000,000 bbl. will be required for local consumption and to augment naval supplies at Pearl Harbor and other stations.

The special federal grand jury impaneled by federal Judge Paul J. McCormick in Los Angeles on May 26 to investigate alleged violations of antitrust laws by California marketers recessed July 6 but will resume on July 25. There were 17 sessions, a total of more than 60 hours, in which 40 witnesses were heard. The grand jury will hear additional witnesses and will examine documents produced under subpoenas.

The investigation is the result, according to the Department of Justice, of complaints charging monopolistic practices and that consumers have been forced to pay a price fixed by a group of marketers. In September, 1930, a consent decree against a number of Pacific Coast companies was entered in the federal court in San Francisco. This was the so-called Frank Long case in which he, as a broker, negotiated contracts for the purchase of surplus gasoline and sold it to other buyers. These were bona fide deals known to the industry and designed to be restricted to California so as not to involve interstate trade. The Department of Justice, however, took the view that such traffic did involve interstate movement even though the actual commodity did not cross state lines. The defendants acquiesced and a consent decree was entered prohibiting collusion and other illegal practices.

In 1936 the Federal Trade Commission, at the request of the attorney general, investigated complaints of practices similar to those which led to the 1930 consent decree. The Department of Justice in November 1937 undertook an investigation, at which time all California marketers opened their books and instructed subordinates to give the fullest cooperation to agents of the department. These investigations resulted in the special grand jury. Specifically, the major companies on the Pacific Coast produce 84 per cent of the gasoline refined and distribute 85 per cent of the gasoline marketed in that area. In April 1936 the price was increased to its normal range.



This is the type of tanker that California companies have determined to be the most satisfactory. Capacity 104,000 bbl., 24 cargo compartments, steam supplied by two Foster Wheeler water-tube oil-burning boilers, overall length 463 ft., and operating speed 13 knots

Illinois Future Indicated by Wide Open Fields

By JAMES McINTYRE

ILLINOIS is the only state in the union where big flush fields are still developed under the system that prevailed in the horse-and-buggy days.

It is apparent that the industry in projecting Illinois' future production is justified in going back to the days before conservation and proration regulations became the major factors in determining production trends in new fields. Previous to 1928 most new discoveries were developed as rapidly as possible with little or no regard to operating methods which would assure the largest possible recovery of crude oil.

In recent years, in states which have conservation acts, this situation has changed and fields are being developed much more slowly. In several instances fields which have been producing for a number of years have not yet reached their peak production. For example, the K.M.A. area of North Texas is producing only 24,000 bbl. daily although it has an estimated reserve of 500,000,000 bbl., which is approximately equal to the proven area in southern Illinois. The K.M.A. operators have been content not to force their production on the market and are also developing their properties in line with the best operating practices. In contrast, ultimate recoveries and available markets have been ignored in the scramble to develop most of the new discoveries in Illinois and the state is rapidly approaching a peak production of 300,000 bbl. daily.

The Salem field in Marion County, for example, is being drained as rapidly as holes can be drilled and wells can produce.

In current production Salem ranks among the largest fields ever developed in the United States. It is producing around 150,000 bbl. per day.

What will it produce one year after it has hit its peak and what will it produce 2 years and 3 years after it hits the peak?

Based on the experience of 15 big fields that can be named it should decline 58 per cent in 1 year, 71 per cent in 2 years and 78 per cent in 3 years. Based on the experience of 11 other big fields it should decline 68 per cent in 1 year, 75 per cent in 2 years and 82 per cent in 3 years.

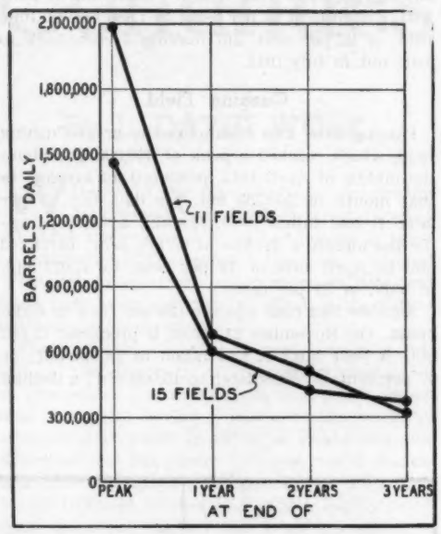
This, of course, presumes that Illinois legislators will not intervene with a law that will conserve the oil by conserving the reservoir pressure.

It may be an eye-opener to oil producers and royalty owners in Illinois to read what took place in previous big fields that were permitted to flow freely regardless of whether the refining industry and the buying public needed the crude oil.

Back in 1901 the Spindletop field in coastal Texas was brought in at a shallow depth. It reached its peak, an average of 62,548 bbl. per day in October, 1902. One year later it was producing an average of 20,409 bbl., a decline of 67 per cent, and 2 years later, 4,914 bbl. or a decline of 92 per cent; 3 years later it fell to 3,672 bbl., a decline of 94 per cent and then it leveled off. It had dropped to below 1,000 bbl. a day when the Yount-Lee Oil Co. drilled to a deeper level and brought up another bonanza of oil which reached a peak of 96,500 bbl. on Christmas day in 1928. A year later it had fallen to 53,500 bbl. a decline of 45 per cent; and 2 years later to 36,550 bbl. or 62 per cent. The decline was made less rapid in the second period of the field's history by the discovery of still deeper pays.

A startling example of the result of wasteful methods of producing occurred in the Powell field in Texas. Powell hit a peak of 315,800 bbl. on November 10, 1925. In 1 year it was down to 71,150 bbl., a decline of 77 per cent; in 2 years to 38,500 bbl., a decline of 88 per cent, and in 3 years to 24,400 bbl., or 92 per cent.

Even worse was the history of the Wortham field in Texas. Like the Powell field and the East Texas field it produces from a Woodbine sand, but contrast its history with that of the East Texas field, which under modern engineering methods is still the largest producing field in the world after yielding 1,345,650,616 bbl. 11 years



Results of unregulated production on two groups of big fields

STATEMENT SHOWING PEAK PRODUCTION AND DECLINE DURING FOLLOWING THREE YEARS FOR MAJOR FIELDS COMING IN SUBSEQUENT TO JANUARY 1, 1923

(Daily Averages)

Field—	Date of peak prod.	Highest production (bbl.)	One yr. after peak (bbl.)	Per cent of decline	Two yrs. after peak (bbl.)	Per cent of decline	Three yrs. after peak (bbl.)	Per cent of decline
Huntington Beach, Calif.	7-14-23	126,000	44,500	65	44,000	65	43,500	66
Tonkawa, Okla.	6-16-23	113,500	35,700	69	58,900	48	34,800	69
Burbank, Okla.	7-21-23	121,700	85,300	30	56,300	54	44,050	64
Santa Fe Springs, Calif.	8-25-23	340,000	57,500	83	52,500	85	49,000	86
Long Beach, Calif.	10-27-23	255,000	138,000	46	107,000	58	60,000	76
Powell, Tex.	11-10-23	315,800	71,150	77	38,850	88	24,400	92
Total (foregoing fields)		1,272,000	452,150	66	357,550	72	255,750	80
Cromwell, Okla.	8-23-24	63,800	28,550	55	16,450	74	12,350	81
Wortham, Tex.	1-17-25	153,800	12,900	92	5,900	96	2,200	99
Total (foregoing 8 fields)		1,489,600	473,600	68	379,900	74	270,300	92
Smackover (heavy), Ark	5-30-25	415,200	134,200	68	89,700	78	60,650	85
Inglewood, Calif.	8-29-25	109,000	45,000	59	34,000	69	29,500	73
Garber, Okla.*	11-21-25	72,150	23,700	67	10,000	86	7,100	90
Total (foregoing 11 fields)		2,085,950	676,500	68	513,600	75	367,550	82
Spindletop, Tex.	12-25-26	96,500	53,500	45	36,550	62		
Panhandle, Tex.	11-20-26	167,600	82,550	51	66,750	60		
Seminole, Okla.	7-30-27	513,900	237,450	(†)				
Crane and Upton, Tex.	10- 1-27	137,150	57,050	(‡)				
Winkler, Tex.	5- 5-28	272,800	143,000	(‡)				

Note—Figures are daily average for the week ending date indicated. *Garber deep sand production started in 1925. †Seminole includes Searight, Earlsboro, Bowlegs and Little River. Production was limited by proration agreement. ‡Proration agreements in effect.

STATEMENT SHOWING PEAK PRODUCTION AND DECLINE DURING FOLLOWING THREE YEARS FOR 15 PROLIFIC FIELDS

(Daily Average Production)

Field—	Month of peak prod.	Highest production (bbl.)	One yr. after peak (bbl.)	Per cent of decline	Two yrs. after peak (bbl.)	Per cent of decline	Three yrs. after peak (bbl.)	Per cent of decline
Spindletop, Tex. (shallow)	10-02	62,548	20,409	67	4,914	92	3,672	94
Humble, Tex.	6-05	93,272	14,962	84	7,686	92	9,618	90
Ranger, Tex.	6-10	73,250	25,500	65	17,200	77	22,420	69
Glenn Pool, Okla.	3-11	83,370	29,811	64	26,033	69	28,108	66
Cushing, Okla.	3-15	269,735	92,303	66	71,246	74	52,027	81
Healdton, Okla.	10-15	86,400	57,580	34	58,921	32	36,221	58
Augusta, Kans.*	11-16	75,000	25,000	67	16,000	79	11,000	85
Eldorado, Kans.*	9-17	109,000	81,000	26	47,000	57	41,400	63
Burkburnett, Tex.	8-19	90,000	50,750	44	49,200	46	30,475	66
Desdemona, Tex.	9-19	45,725	12,000	74	5,800	88	3,000	94
Homer, La.	8-20	67,484	28,258	58	15,369	77	10,147	85
El Dorado, Ark.	8-21	66,984	30,677	54	21,192	68	12,800	81
Mexia, Tex.	1-22	141,065	56,477	60	36,052	74	25,200	82
Breckenridge, Tex.	1-22	110,806	47,433	57	30,094	67	21,066	81
Haynesville, La.	3-22	87,794	35,121	60	19,087	78	14,500	83
Total		1,462,433	607,281	58	425,794	71	321,654	78

*All production figures shown are daily averages over a period of a month with the exception of those marked thus (*) which are daily averages over a period of a week.

after discovery. The Wortham field, like the Salem field, was developed as rapidly as wells could be drilled and reached a peak on January 17, 1925, of 153,800 bbl., but in 1 year had fallen to 12,900 bbl. a day, a decline of 92 per cent; in 2 years to 5,900 bbl., or 96 per cent, and in 3 years to 2,200 bbl., or 99 per cent.

Humble, Texas, which averaged 73,250 bbl. a day during June 1910 fell to 14,962 bbl. in June 1911, a decline of 84 per cent; to 7,686 bbl. in June 1912, or 92 per cent, but making a come-back to 9,618 bbl. in July 1912.

Cushing Field

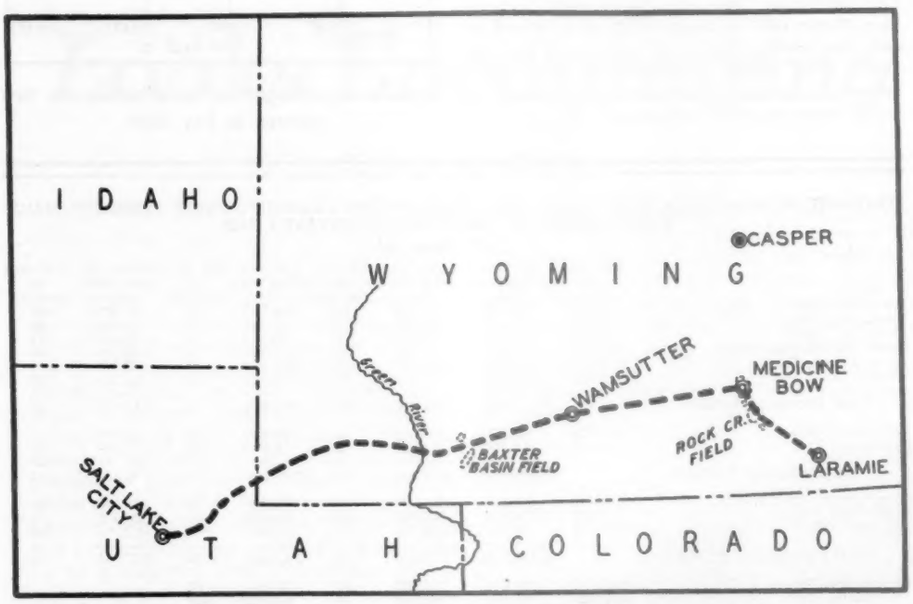
Passing over into Oklahoma the great Cushing field, which reached a peak of 330,000 bbl. about the middle of April 1915, produced an average in that month of 269,735 bbl. per day, but a year later it had fallen to 92,303 bbl. as an average for the month, a decline of 66 per cent; to 71,246 bbl. in April 1916 or 74 per cent, to 52,027 bbl. in 1917, or 81 per cent.

Another bad case was the Garber field in Oklahoma. On November 21, 1925, it produced 72,150 bbl. A year later it had fallen to 23,700 bbl., or 67 per cent; 2 years later to 10,000 bbl., a decline of 86 per cent, and 3 years later to 7,100 bbl., or 90 per cent.

California contributed a number of "horrible examples" of wasteful production methods, the most flagrant having been the Santa Fe Springs field, which on August 25, 1923, reached a peak of 340,000 bbl., and in 1 year had dropped to 57,500 bbl., a decline of 83 per cent; in 2 years to 52,500 bbl., or 85 per cent, and in 3 years to 49,000 bbl. or 86 per cent.

This record of maladministration of natural wealth could be carried to considerable length. Instead the remainder of it is presented in tabular form quick reading. Maybe the quicker it is read the better it will be for the future of Illinois as an oil-producing state.

The figures used here were compiled 10 years ago by the American Petroleum Institute, and appear in the second edition of Petroleum Facts and Figures, Pages 89-90. The tables present the record of 31 fields that were produced in much the same way as Illinois fields are being developed, that way being to get the oil out of the ground as fast as possible regardless of the effect on the reservoir and regardless of the effect on ultimate production.



Projected route under consideration is for the line to start at Laramie and run westerly, through Medicine Bow, Wamsutter, through Sweetwater County to Green River and thence to Salt Lake City

Stanolind Engineers Survey Route of Proposed Wyoming Pipe Line

By T. R. INGRAM

DENVER, Colo., July 17.—Negotiations looking toward the construction of a major pipe line from the Lance Creek field, through Wyoming and eastern Utah to Salt Lake City have reached the stage where engineers are engaged in investigating the feasibility of the project. The line would be approximately 420 miles long and cost around $7,000,000. No official confirmation is avaible, but the project is being given serious consideration.

A party of Stanolind Pipe Line Co. engineers were in Wyoming the past week on a reconnaissance survey of the territory to be traversed. Several of the major companies with producing properties in Wyoming and Colorado whose interests will have to be considered in working out an agreement admit that the matter is being discussed. While the Standard of Indiana is mentioned as the leader in the movement, the Ohio Oil Co., Texas Co., California Co., and others, undoubtedly will be consulted and possibly asked to enter into agreements of one kind or another regarding the movement of crude.

The Lance Creek field constitutes the biggest oil reserve in the northern Rocky Mountain area, some estimates of ultimate recovery going as high as 80,000,000 bbl. Shipments from the field are being made by truck, rail and pipe line to refineries in Nebraska, Colorado, Wyoming, Idaho and Utah, with approximately 7,000 bbl. per day being taken by Standard for shipment through its trunk line to its refineries in Missouri, Illinois, and Indiana. The market, however, is highly competitive on shipments to the east on account of the situation in Kansas and Illinois, and this condition likely will continue for several years. The development of markets westward, not only for Lance Creek crude, but for oil from other fields in southern Wyoming and northern Colorado, is believed to offer a logical solution of the problem.

The Utah Oil Refining Co., a subsidiary of the Standard Oil Co. of Indiana, has a refinery at Salt Lake City, Utah, with a distillation capacity of 8,500 bbl. daily and a cracking capacity of 5,400 bbl. There is no crude oil production of importance in that state and the plant's requirements come from Wyoming fields and from the Iles field in northwestern Colorado. In addition there are several other plants of lesser capacity in that area and at least one of these is at present drawing part of its supply from Lance Creek. Some of this crude also goes to Pocatello, Idaho, and Spokane, Wash., in which states there is no oil production.

Tentative Route of Line

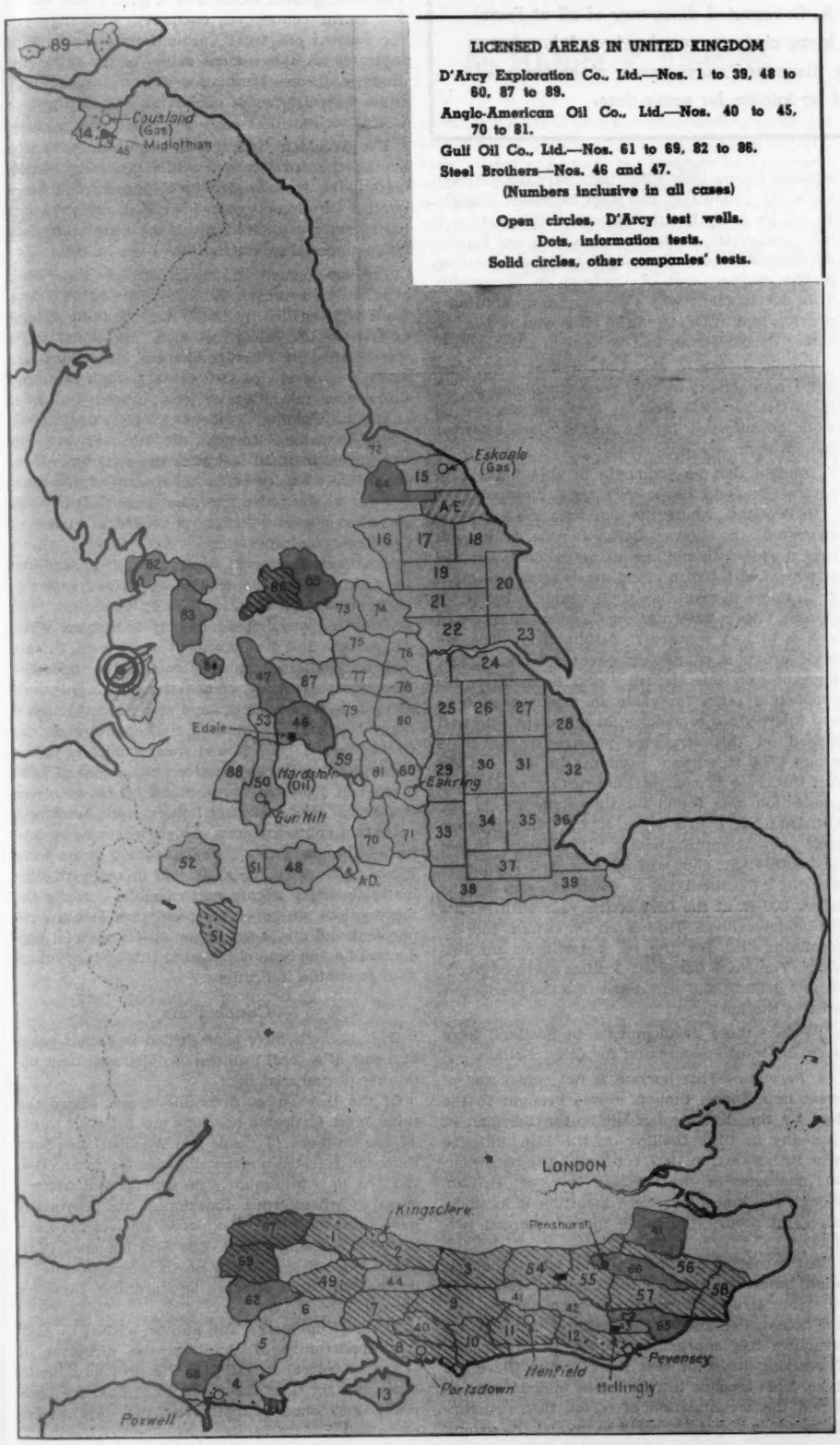
A tentative route said to be under consideration is for a line to start at Fort Laramie, Wyo., the junction of a line from Lance Creek operated by the Illinois Pipe Line Co. with the Stanolind trunk line to Missouri. Thence the projected line would run westward through Carbon County, where are located the Medicine Bow, Rock River, Quealy, and other pools, then westward to Wamsutter, through Sweetwater County to Green River, and thence to Salt Lake City parallelling the gas line of the Mountain Fuel Supply Co. Such a route, through the laying of feeder lines, would connect up the Powder Wash and Hiawatha fields in northern Moffat County, Colorado, both of which are shut in at present, the La Barge district in Sublette County, Wyoming, which now has a pipe line from the field to Opal, and possibly with the Iles and Wilson Creek fields in Moffat and Rio Blanco counties, Colorado. Tentative plans provide for pump stations at Fort Laramie, Wamsutter and Granger.

The effect of such a project might be to open new markets for crude in those Rocky Mountain states which now have no oil production, find outlets for fields which are now shut in or are restricted as to production by lack of markets, and offset a pronounced and growing tendency of California operators to extend their markets for petroleum products into that territory. It is apparent, however, that there are numerous details which will have to be worked out before the project can finally be approved and construction started.

Thomas A. Dines, president of the Utah Oil Refining Co., stated that the company has no announcement to make at this time and that there may be none at a later date. He said that any announcement at this time would be premature. It is understood that the Utah Oil Refining Co. will build the line should it finally be decided to go ahead with the project, and that the engineering features will be worked out by the Stanolind company.

If the project is carried out as tentatively outlined here, the construction work will be the largest crude-oil pipe-line item to be undertaken thus far in 1939.

Search for Petroleum in Great Britain Continues



By L. DAVID WOSK

WHAT are the possibilities of developing commercial production in Great Britain? What the the evidences of oil and factors in favor of exploration? What are the favorable horizons? What development has taken place to date and what have been the results? What is the future outlook for development?

These questions will be covered briefly in this article. The discovery of commercial production in appreciable quantities close to a highly developed industrial market would alter the world oil situation over night. In so far as production anywhere affects the nicely balanced world market and price structure, and in so far as the search for oil in Great Britain (a compact, highly developed industrial nation) has been intensified in recent years. these questions are important.

Seepages

Oil seepages in Great Britain, both at the surface and in coal mines, have been known for several centuries. Records of the use of oil derived from coal seepages date from 1684. Intermittent attempts to utilize and develop these seepages were made, but only in recent years has a scientific program of study, accompanied by a systematic plan of development, been undertaken.

Some drilling was undertaken in 1902, stimulated by the accidental discovery of natural gas at Heathfield. This venture was soon abandoned. Further search lagged until war-time conditions, accompanied by greater demand and high prices, stimulated a serious search. Between 1918 and 1921, 11 tests were drilled for the government. In every case the geological objective was the Carboniferous. Shows of live oil and gas were found in several of the wells but, while giving encouragement for further wildcatting, were disappointing as far as commercial production was concerned. Post-war easing of the demand for oil, lower prices and disappointing results in drilling caused a lull in exploitation activity. Two additional dry holes were drilled between 1924-26.

D'Arcy Exploration Co., Ltd., a subsidiary of Anglo-Iranian Oil Co., Ltd., engaged in exploration work, has in recent years conducted a thorough geological examination of Great Britain and followed it up with a drilling program designed to test conclusively the possibilities for commercial production.

The geological staff of D'Arcy was stimulated to a reconsideration of the problem by the discovery of new seepages and oil-impregnated rocks, a better understanding of geological conditions governing oil accumulation, geophysical developments and developments of deep drilling techniques.

Further encouragement was given to exploration work by the British Petroleum Production Act of 1934, which nationalized the oil rights of the country and made it possible for exploration companies to obtain large prospecting licenses directly from the government.

The first prospecting license was granted to

L. David Wosk, the author of this article, is a well-known American petroleum engineer and geologist who has traveled extensively and is familiar with operations outside the United States. He is now in Europe, and this article is the first of a series which is being prepared for exclusive publication in The Oil and Gas Journal. Since the accompanying article on developments in the United Kingdom was written, five new prospecting licenses have been granted to Anglo-American Oil Co., Ltd., covering 573 acres in Lancashire and in Scotland. Recently D'Arcy Exploration Co., Ltd., which has licenses in areas A. D., A. E., and A. C. reported discovery of oil at Formby, 9 miles north of Liverpool (indicated by large circle on map), where it has been drilling for several months. It is thought this discovery may prove of commercial importance but its value will not be known for some time.

D'Arcy in December 1935, covering a total area of 6,946 sq. miles. The accompanying map, as of February 1939, shows the area under license, to whom granted, and a record of the operations as of that date. It can be seen that both in area and degree of activity, D'Arcy leads the field, though Anglo-American Oil Co., Gulf Exploration Co., Ltd. (Great Britain) and Steel Bros. & Co., Ltd., also did considerable geological and development work.

Horizons and Development

Great Britain, while occupying a small area, presents a very complex geological picture. It is not the purpose of this brief article to go into full detail in the geological considerations. Both from the standpoint of organic sediments (oil shales, impregnated limestones, sandstones, etc.) and live seeps, the following general horizons were considered as having possibilities:

1. *Carboniferous.*—Most of the known oil seepages of Great Britain are found in this horizon. Small production of a noncommercial character has been known for many years in this horizon from the shales in Scotland and also from the limes in middle eastern England. Attempts to develop and commercialize these seeps have been unsuccessful. Unquestionably, oil has been generated in this horizon and numerous live seeps in coal mines directly associated with the coal are also known. Migration from the Carboniferous, both up and down, has been noted. In Scotland, numerous igneous dykes and sills cut across well-developed structures and are credited with distillation of the oil from rich shales and account for the numerous seeps in the lower Carboniferous shales. The D'Arcy well near Edinburgh has numerous good showings in the Carboniferous, one producing 1,700 gal. of live oil. This area is now looked upon with the greatest favor and is the scene of most of the present activities.

In the middle and eastern areas, where many Carboniferous seeps were found, most wells in the past were drilled on inadequate structures. Recently geophysical investigations were carried out in this area, as the Carboniferous is blanketed by younger sediments. Seismographs failed to check the previous magnetometer work, but confirmation of a structure developed from colliery workings near Ollerton in Nottinghamshire was made. Location has been made for a test at Eakring. In 1937 a location for test was made at Gun Hill in North Staffordshire (see map) to test the Lower Carboniferous limestone. This horizon was topped at 1,535 ft. Cores taken in the thin shales and limestone beds overlying the objective showed many encouraging evidences of oil, but the objective horizon was dry. The well was drilled to 3,861 ft. for geological data and then plugged. The Hardstoft well, east of Gun Hill (see map), which has been producing approximately 7 bbl. per week, was deepened from 3,127 to 3,272 ft. and acidized during 1938. Final tests have not yet been made but production has been increased slightly. It can be seen that production of this nature is not commercial, though it may encourage further development. Several shallow holes were drilled in the seepage area of Coalport in Shropshire. This development was also very disappointing—proving that in this area the oil is confined to the Upper Carboniferous and is local in character.

The Steel Bros. & Co., Ltd., well at Edale (see map) commenced in 1937, was completed at 757 ft. in October 1938. Several shows of gas and oil were encountered in the Lower Carboniferous, though none was important.

To date the developments in this horizon of central England have been very disappointing.

In Scotland, where the activities are now concentrated, the Lower Carboniferous is present over a wide area and one attractive double-domed structure with 500 ft. of closure is known to exist. Each dome thereon has approximately 200 ft. of closure. This is known as the Causland-D'Arcy fold and is located southeast of Edinburgh. The oil-shale group is completely covered by the lower limestone on this structure and possibilities for production seem favorable in argillaceous beds and interbedded sandstones in the shale. One well drilled on this structure penetrated the shale group 1,600 ft. without reaching the base—so the full thickness is not yet known. Commercial gas production was found on this structure in the Causland No. 1 at a depth of 2,917 ft. Drill-stem tests showed approximately 10,000,000 cu. ft. per day with slight shows of oil. The well is shut in. The No. 2 Causland, 200 ft. down dip, was drilling below 600 ft. at the first of the year with results yet undetermined. This is an important and determining test for the oil possibilities on this dome. The No. 3 Causland, 2 miles north of No. 1, is now drilling and will determine the productive area to the north.

To date these developments in Scotland have been the most encouraging for Great Britain.

2. *Permian.*—This horizon is not considered of great importance, though it was brought to the fore by the discovery of oil in the Permian of Germany in 1930. Drilling on the Elm anticline near Brunswick, in 1932, confirmed the petroliferous character of the Permian in Great Britain, though the limestones were insufficient in thickness and porosity to make for commercial production.

In the eastern part of England, where the Permian limestone overlies the Carboniferous, considerable structural work has been carried out, one hole drilled and another drilling. The Eskdale structure has approximately 400 ft. of closure. Traversing its southwest flank is the Cleveland dyke. This igneous intrusion has undoubtedly affected the accumulation of oil on this structure though it is as yet too early to predict the extent.

No. 1 Eskdale (see map) was abandoned in 1938 at 2,486 ft. in the Triassic without reaching the objective. A second well 100 ft. from the first was drilling below 4,200 ft. in the upper limestone of the Permian early in 1939.

3. *Jurassic and Wealden (Cretaceous).*—The Jurassic is considered second only to the Carboniferous as a potentially productive horizon. Many oil seeps are found in it. The shales are bituminous as are some of the sandstones and the oil derived by destructive distillation of its shales and impregnated sands is of a good grade with a low sulfur content, as compared with high sulfur content oils from Carboniferous shales. This indicates an independent origin of the oil in the Jurassic. Close examination of the Jurassic indicates several types of oil having been indigenous to this series.

The Wealden beds of Lower Cretaceous age overlie the Jurassic and while generally considered to be fresh water in origin, have a large number of oil-impregnated sands. Many showings have been encountered in this horizon, but to date no commercial production has been found.

The developments in these horizons have been confined to southern England. During 1938 two wells were drilled by the D'Arcy, making a total of five to test these horizons. Additional wells were drilled by other companies. Here there are many well-developed structures, though the steep Cretaceous unconformity complicated the local situation. Folding, evident in the Cretaceous, seems to extend through the Jurassic on large structures. In some instances the structures have been deeply eroded below the unconformity, making for shallow drilling depths and clearly observed evidence of structural conformity between Cretaceous and Jurassic.

The Portsdown well went to 6,556 ft. and the Henfield well to 5,105 ft. The Klingsdere well was abandoned at 5,125 ft. in Triassic. A shallow well at Pevensey was drilled to 842 ft. to test the Wealden series. Gulf Exploration Co. of Great Britain drilled a well at Penhurst, based on an extensive seismographic study of the structure. This well started in Lower Cretaceous and went through a normal series of Jurassic, then penetrated the Carboniferous 1,000 ft. and was abandoned in the Lower Carboniferous limestone at a depth of 5,600 ft. late in 1938. No shows of oil or gas were encountered. (For location of these wells see map.)

In this southern area, which is considered to have been adequately tested, all sandy strata were found to be very fine grain and mixed with silty material—hence highly impermeable. Porosity determinations on cored samples were less than 5 per cent and may account for no commercial production having been obtained in this area of otherwise favorable indications.

Conclusions

Over 13 wells have been drilled in recent years at a cost of several millions of dollars without obtaining commercial oil.

Of the three most favorable areas, where the three most favorable horizons are believed to exist, the southern (Jurassic and Wealden) has been thoroughly tested and possibilities for production reduced to a minimum. The central and eastern areas (Carboniferous limestones and Permian) have been extensively explored and results have been very disappointing. The Scottish area (Carboniferous shales) in the north seems to date to be the only area offering any promise, however limited.

Acknowledgments: The author wishes to take this opportunity of thanking the directors of D'Arcy Exploraiton Co. and the geological staff, especially Dr. G. M. Lees and P. T. Cox, for their ready assistance in gathering the data herein contained.

Kansas May Use Acreage Factor

By HARRY F. SIMONS

KANSAS oil operators last week received some indication of what relief they may expect through wider spacing and modern methods of obtaining well potentials when the Kansas Corporation Commission released copies of the new rules which have been tentatively accepted subject to a hearing at Topeka on July 26. The new rules were promulgated under the proration law as revised by S.B. 185, passed at the last session of the legislature.

Principal changes include introduction of the acreage factor in determining a well's productivity and the production allowed to a well, and the acceptance of the draw-down method of obtaining an indicated potential. Of primary interest is the limiting of potentials on wells to 2,500 bbl. each.

Many Kansas operators have been searching for some means of increasing their profits or decreasing the amount and time of the investment required to pay out. With introduction of the acreage factor, the tendency will be to drill wells on 20 instead of 10-acre spacing, with each well receiving a larger allowable. There are approximately 20 fields that now have spacing larger than 20 acres through agreement of the producers.

The top potential limitation will prevent the state's production from rising too rapidly, will allow the income of operators of low-production flush or semiflush wells to approach that of the owners of larger wells, and will decrease the rate of withdrawal from flush pools with heavy production and consequently increase their ultimate recovery.

The new method of taking potentials will decrease the well expense by eliminating the temporarily excessive production and the reduction of investment in the heavy equipment necessary to obtain high physical potentials. This method was discussed in The Oil and Gas Journal, Feb. 9, 1939, Page 42, and March 2, 1939, Page 49.

The Senate bill did not include the world "potential" but it crops up frequently in the new rules. Therein it is defined as "the properly computed daily ability of a well to produce oil without waste, as determined by the rules and regulations of the commission." Physical or draw-down tests may be used and the director of conservation may specify the type of test which reflects the ability of a particular type well to produce.

The maximum potential assigned to any such well, according to the order, shall be 2,500 bbl. per day less the percentage of water. The assignment of a potential in excess of the amount shall be considered evidence of waste. Tests to determine the potential or productivity of a well must be carried out under the supervision of the commission and the operator is required to furnish a map of the connections and such other information as the representative of the commission may require.

When taking a physical test, the order requires the test be taken in the manner in which the well is normally produced, with flowing wells limited to 3-in. tubing with perforations at the producing horizon and pumping wells limited to reciprocating pumps with a 3-in. working barrel, 54-in. stroke and producing through 3-in. tubing; when produced through casing, the wells must be limited to a 3-in. working barrel. A volume of liquid sufficient to fill the annular space between the tubing and casing must be removed before the starting gage on the test.

For the draw-down method, the new rules require that three liquid level points or pressure measurements be established after the well has reached equilibrium. Equilibrium is considered to be the point where variation in the average liquid level does not exceed 5 ft. per hour or, when a bottom-hole pressure gage is used, a variation of 5 lb. per hour. Pumping or flowing speeds shall be such as to establish definite points for the extrapolation of a draw-down curve and be at least at the rate of 5, 10, and 15 bbl. per hour. except that no well shall be required to produce in excess of 50 per cent of its liquid capacity.

A straight line plotted through the lowest production rate point and a point which is the average of the two higher points established by the test determines the draw-down curve.

Temporary potentials may be taken prior to the installation of permanent equipment, according to the rules. Tests taken with the permanent equipment are required in 45 days unless the director is satisfied that the delay is due to circumstances beyond control of the operator. Swabbing is prohibited except for a temporary potential. Pool tests shall be taken at 12-month intervals after the tests as ordered by the commission.

Operators controlling a majority of the producing properties in a pool may make application for some other method of establishing potentials under the rules. The application must be accompanied by an affadavit of two competent persons that they have investigated the method and it will truly reflect the ability of the pool to produce. Copies of the application must be sent to each operator in the affected pool, and operators so desiring may file an objection and obtain a hearing before the commission. If no objection is raised the commission may grant the application without hearing.

Introduces Acreage Factor

Under "Market Demand and Proration" the Corporation Commission is required to hold monthly hearings for the purpose of determining reasonable market demand for the prorated pools. In applying the "acreage reasonably attributable to a well" for the purpose of determining the productivity, a 10-acre production unit shall be considered the basic denominator. A well on a 15-acre unit will be considered as having one and one-half times the productivity of a well on a 10-acre unit, and a well on 20 acres will have two times the productivity of a well on a 10-acre unit.

On the basis of a 1,000-bbl. well the following will be the table of productivity:

Gov. P. H. Ratner of Kansas

Acreage	Productivity
5	500
10	1,000
15	1,500
17	1,700
20	2,000

The same application of the acreage factor holds in establishing a minimum per well. "The minimum of 15 bbl. per day per well, as fixed by the conservation law, shall be considered as applying to a well on a 10-acre production unit . . . in considering the acreage reasonably attributable to wells within any pool, their daily allowable shall not be reduced below a minimum which bears the same relation to 15 bbl. daily as the acreage attributable to the well bears to 10 acres."

In the allocation of production within a pool, the minimum wells are first granted their allowable and the balance of the pool allowable shall be prorated among the other wells proportional to their productivities as modified by the acreage attributable to them respectively. A limit of 20 acres is placed on the acreage attributable to any well.

The Corporation Commission may order spacing larger than 20 acres but not exceeding 40 acres upon application in writing of the owners or lessees of more than 50 per cent of the acreage within the probable productive limits of the pool.

To obtain an attributable acreage of more than 10 acres, the well must be located as near as possible to the center of the area claimed, the length of the area not to exceed twice its width. The rules then include a procedure whereby a well drilled on a 10-acre location may assume the status of a larger acreage well, upon a showing by the operator that he intends to follow a wider spacing. The larger acreage is attributed only after a succeeding well is drilled on the wider spacing program.

Before more than 10 acres will be attributed to any well, the operator must file a plat drawn to a scale of 4 in. to the mile and an affidavit with the commission stating that the plat is accurate. Operators of wells on less than 10 acres are required to file similar plats.

Purchasers of waste oil are required to file with the director a report of the oil taken from each well, lease or pool the same as the purchasers of other oil in the state.

The new rules were the work of an operators committee, headed by T. C. Johnson, independent operator, of Wichita.

KANSAS

THE KANSAS CORPORATION COMMISSION has called a meeting at 801 Harrison Street, Topeka, on Wednesday, July 26, to which crude oil purchasers and producers are invited and at which rules and regulations relating to the production in Kansas will be discussed, after which an order will be issued.

TEXAS

FEDERAL JUDGE T. W. DAVIDSON of Dallas, Tex., sitting for Judge Randolph Bryant July 15, transferred to the western federal District Court at San Antonio the suit of Rowan & Nichols Oil Co. to enjoin Federal Tender Board No. 1 from interfering with the company's production under a special court order issued June 14. Transfer of the suit from Tyler to San Antonio, where it will be heard July 22, was agreed upon by the counsel for both sides.

Rowan & Nichols charged that the Tender Board had refused to grant a tender for oil produced under the decision of federal Judge R. J. McMillan at Austin, and sought an injunction. It also sought a court writ to move into interstate commerce oil produced and to be produced from its five wells on a 25-acre tract near Gladewater during July under the federal court order which made an exemption on these wells. The Tender Board on July 8 ruled on application of Rowan & Nichols for a forecast tender for July that production under the court order was contraband in the meaning of the Connally hot oil act and refused tender.

AN APPLICATION FOR ADJUSTMENT of its oil allowable in the East Texas field in conformity with the federal court decision in the Rowan & Nichols case was filed with the Railroad Commission by Sinclair Prairie Oil Co. last week. The company pointed out that it owns 6,785 productive acres in East Texas, 5.08 of the total acreage, whereas its allowable is only 4 per cent of the total. It asked for an adjustment on the basis of its drilled density in relation to the density of the rest of the field. The commission did not act on the petition, nor on any of the several others filed, and to date none of the companies filing petitions have indicated they would go to court to obtain injunctions according to the terms of the Rowan & Nichols decision.

INCREASED ALLOWABLES for several fields and exemption of three others from Saturday and Sunday shutdowns during July were granted by the Railroad Commission last week to meet increased market demand for crude from these fields. In West Texas, allowable of the Slaughter field of Hockley County was raised from 1,691 to 4,600 bbl. daily and in the Duggan field of Cochran County the allowable was raised from 459 to 1,656 bbl. daily, retroactive to July 10. The Furhman field allowable was boosted from 2,037 to 5,000 bbl. daily retroactive to July 1. Wells in the Howard-Glasscock, Iatan-East Howard and Snyder fields were exempted from shutdowns during July. Allowable of the Mason field, Loving County, was raised from 251 to 522 bbl. daily.

On the Gulf Coast, allowable of the new Cordelle field in Jackson County was raised from 2,088 to 2,954 bbl. daily; the Satsuma field of Harris County, from 360 to 423 bbl.; and the New Mykawa field, from 650 to 963 bbl. In East Texas the Van field of Van Zandt County received an increase from 19,732 to 23,732 bbl.

STAGGERED SPACING on a 330-933 pattern, with proration based 50 per cent on potential and 50 per cent on acreage so operators might drill on larger units than the 10-acre spacing in effect in the Foster field of Ector County, in West Texas, was advocated before the Texas Railroad Commission. Indian Territory Illuminating Oil Co. sponsored the plan, which brought opposition from others who had developed the field on the 10-acre straight potential basis.

Mark McGee, representing I. T. I. O., argued that federal Judge R. J. McMillan's opinion in the Rowan & Nichols case made consideration of acreage mandatory in all proration plans.

Under this opinion, Mr. McGee said: "We construe that acreage must be given some consideration." His statement brought immediate rebuttals from Paul McDermott, of Sinclair Prairie Oil Co., and other attorneys. Mr. McDermott said the most that could be made of the opinion was that a field developed on a unit plan such as the 10-acre unit in East Texas should be so prorated to give the 10-acre unit its fair share of the allowable.

I. T. I. O. evidence was presented through Charles M. Langford, former chief engineer for the commission. Langford thought one well would adequately drain 20 acres, but would not say the present 10-acre spacing pattern is resulting in waste. The "prudent" operator, he said, should not be penalized by reason of the imprudent operator's production practices. Langford asserted staggered spacing would provide for more uniform withdrawals; that it would enable drilling up to a 10-acre pattern if closer spacing was deemed advisable to recover the oil in the reservoir.

The "roll call" plan showed: For I. T. I. O., Stanolind, Arkansas Fuel, Sun, Landreth Production, Humble, Texas Pacific Coal & Oil Co., Atlantic, Continental, Ohio, Mid-Continent and Shell. Against: Barnsdall, Sinclair Prairie, Sun-Ray, and numerous independents, including Broderick & Calvert, Amon Carter, Lee Drilling, and Sloan & Zook.

STATE CAPITALS

COMDR. WILLIAM G. GREENMAN, U.S.N., for the past two years has been engaged on a program for consolidation of the Navy's oil reserve in California. He has just been relieved as inspector of naval petroleum reserves in California by Lt. Comdr. Wentworth H. Osgood.

KENTUCKY

COL. E. O. THOMPSON, chairman of the Interstate Oil Compact Commission, in an address at the annual meeting of the Kentucky Oil and Gas Association at Lexington, said:

"We hope we will be able to so preserve the pressure that field (East Texas) can be produced for many, many years. And now the engineers are rather in uniform accord there will be recovered 2,000,000,000 more barrels of oil. So there, my friends, is a 2,000,000,000-bbl. dividend for proration, and a 2,000,000,000-bbl. dividend to Texas and the nation for the efforts at control of oil production by the State of Texas.

"We are supervising 522 other fields, and at this time we have field after field in Texas where the pressures are being built up rather than being reduced. For the last 13 months the pressure in the East Texas field has stood at around 1,100 lb., and we hope to keep it there by reducing the rate of flow as the pressure drops.

"It has been our aim always to prevent physical waste. We started out with an economic problem and ended up by solving it with a waste prevention approach. Our orders have been upheld because they have been based upon the prevention of preventable physical waste.

"If you haven't seen the Arkansas law, get it and read it, because it is worthy of your study, and oil is being prorationed in Arkansas in splendid shape. They have a good setup and they are going at it in a vigorous manner. California has passed a good conservation law. The states are all lining up to prevent physical waste.

"Up in Illinois, either wisdom or nature will prevail in the end. By that I mean that the Legislature of Illinois will, in its wisdom, either pass a conservation statute or it will not. If they pass the conservation law, they will bring their fields under proper control and restraint so there will be no need to worry about it. If they do not pass a law, then nature will take care of the situation by blowing its head off in a short time. If the state prevents waste by law many extra hundreds of millions of barrels will be recovered."

ILLINOIS

A BILL REQUIRING DRILLERS in Illinois to file logs of their progress with the state, and to keep cores of formations they penetrate available for inspection by representatives of the state Geological Survey, became a law last week, after it was signed by Governor Horner at Springfield.

The bill was an outgrowth of a series of hearings conducted by the senate-house joint legislative committee which was appointed to investigate the state's yearling oil industry.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers will meet next week to set the allowable production of the state for the month of August and it appears quite probable that the state's allotment will be increased over that set for July. The allotment for September, however, will probably see a tapering off in the allowable, because with the resumption of the school year consumption shows a decline. The vacation and resort season usually ends rather abruptly on Labor Day and generally comes to a close not later than Admission Day, which commemorates the state's admission into the union, on September 9 of each year. General business conditions have not come up to expectations on the Pacific Coast this year and consequently gasoline consumption will probably only run about 2 per cent ahead of last year. This is a normal expectation but it may be possible that increased travel to the International Exposition at San Francisco may pick up during August and September in which event consumption should average better than 3 per cent ahead of last year. With the federal grand jury recessed until July 25 conditions in California have settled down to normalcy again for a short time.

The OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

Published weekly by The Petroleum Publishing Company at Tulsa, Oklahoma

Pipe-Line Year

A sufficient number of pipe-line projects under way or now being definitely planned assures that 1939 will be one of the best pipe-line years in the past decade.

As a direct result, there will be many thousands of new consumers of natural gas next winter and other gas markets which have been only partially supplied will have their full requirements satisfied.

In crude-oil transportation there have been many extensions to the existing systems and new trunk lines connecting to old and new producing areas.

The trend toward distribution of gasoline from the refineries by pipe line which has been gaining momentum rapidly appears certain to spread in several directions over the next few years.

Some may ask why, in a year in which so many industries have been disposed to mark time, should pipe-line transportation systems be expanding.

The answer is that the oil and natural gas industries have never been content to stand still and have taken advantage of dull periods in general business to expand rather than contract their operations.

There is, of course, the factor of necessity in this development. By finding new customers the natural gas industry is able to operate its facilities nearer to capacity, thus offsetting decreased revenue per unit of sales by increased volume.

In the oil business the margin of profit on the industry's operations is so low that advantage must be taken of every opportunity for lower costs.

Profits in the refining and marketing branches are measured in fractions of a cent per gallon. A saving of ¼ cent a gallon in manufacturing and marketing may represent the difference between a profit and loss in the entire operation.

The fact that wholesale prices for finished petroleum products are now approximately half what they were 13 years ago is the result of this situation. It has been brought about by the oil industry taking advantage of every possible means of reducing costs through more efficient operating methods and increasing volume.

It has been the policy of the industry to pass on these savings in operating costs to its customers.

These lower prices in turn explain why, in bad times as well as in good times, there has been a steady increase in the demand for practically all the products of the industry.

As usual in such circumstances, there is opposition from those who feel they are adversely affected by the oil industry's progressive policies.

Outstanding among these complainants have been the railroads and the industries which sell fuel products in competition with those of the petroleum and natural gas industries.

The position of the customer must be the ultimate test in deciding this controversy. Those considering these complaints should investigate carefully to see that they do not in fact rest upon a self-satisfied business attitude, inefficiency or lack of advancement in operating methods.

Where less enterprising industries, suffering from their own lack of foresight or inability to cope with changed conditions due to governmental regulations, have been clamoring for higher rates or governmental assistance in meeting competition, the oil and gas industries have met their problems by giving the public a superior product at a lower price.

The expansion of the pipe-line transportation systems has by no means reached its limit. Certain phases have, in fact, only been started, provided the industry is not obstructed by those who seek to perpetuate their own uneconomic methods.

Consolidation of Properties in Lance Creek Planned

DENVER, Colo., July 17.—A consolidation of several important independent producing properties outside of the unitized area of the Lance Creek field, Niobrara County, Colorado, is expected to be announced within a few days. One deal reported about to be closed is said to involve in excess of $1,000,000, and another in process will be much greater. Ralph E. Davis & Co., consulting engineers of New York, are reported to have had engineers appraising properties and upon their report depends the next move. This firm is reported to be representing F. W. Clifford, of Minneapolis. The Clifford interests are said to have obtained options on the Novick tract and the entire capital stock of the Minnelusa Oil Corp. R. S. Shannon, president of the Minnelusa company, had nothing to say regarding the reports.

Clifford last year started a deep test in the old Torchlight field in northern Wyoming and became identified with Wyshawn Oil Co., which drilled in the Shawnee district in Converse County. It is understood a new company to be called Wylance Corp. is in process of organization under the laws of Delaware. Last January R. S. Shannon, who formerly was head of the production department of Continental Oil Co. in the Rocky Mountain area, was elected president and general manager of Minnelusa, with A. B. Cobb, vice president, and Fred Goodstein, secretary and treasurer. At that time the company owned and operated approximately 500 acres of proven Leo sand production, plus 1,200 acres of prospective territory, and an interest in Rocky Mountain Pipe Line Co., which last year built a line from Lance Creek to Denver. The company had five Leo sand and one Sundance sand wells. Since then it has completed several wells, one the largest producer ever brought in in Lance Creek. It also has been active in acquiring other interests. A. B. Cobb, who was active in organizing the company, is said to have sold his Minnelusa stock recently. This did not involve the Novick tract, of which he was the owner. The Novick tract embraces 240 acres in the west half of Section 6-35-65. It formerly was held jointly by Cobb and Holly Development Co. The deal for this tract is an entirely separate transaction from that involving Minnelusa.

Fuel Contracts Awarded Under Walsh-Healey Act

WASHINGTON, D. C., July 17.—Contracts valued at approximately $1,001,134,142 and numbering 14,777 have been awarded under the wage and hour provisions of the Walsh-Healey Act since this law went into effect on September 28, 1936, according to the Division of Public Contracts of the Department of Labor. The relative importance of fuel in these contracts is shown by the following figures:

Asphalt, coal and petroleum products—	No. of contracts	Value	Per cent
Asphalt, oil and tar, etc.	439	$13,697,498.62	1.35
Coal and coke	245	6,397,959.31	0.64
Fuel oil	479	46,666,363.26	4.67
Gasoline	696	48,217,794.88	4.82
Lubricating oils and grease	26	6,124,600.09	0.60
Miscellaneous	67	3,149,912.89	0.31
Total	1,952	$124,154,131.05	12.41

Ark-La-Tex Division W.P.R.A. Meeting at Shreveport

The monthly meeting of the Arkansas-Louisiana-Texas division of the Western Petroleum Refiners Association was held July 14 at the Washington-Youree Hotel in Shreveport. The special feature was a paper "Gas Purification and the Girbotol Process," by Basil Storrs, sales engineer of the gas processes division of the Girdler Corp. of Louisville.

Oil Companies in Litigation Over Producing Properties

HOUSTON, Tex.—Houston Oil Co. and Southwestern Settlement & Development Co. have filed a civil action suit in U. S. District Court against Republic Production Co. asking $500,000 damages and clearing of title to a half interest in producing properties owned jointly by these companies in Polk and Newton counties, Texas, and Cameron and Beauregard parishes, Louisiana. The court is asked to appoint a master in chancery and an auditor to hear and examine the data involved in the suit.

Lower Fort Norman Fuel Aids Mining Operators

TORONTO, Ont.—At the annual meeting of Eldorado Mines, Ltd., operating in the Great Bear Lake mining area, Pres. Gilbert Labine reported that metallurgical problems at the mine had been completely solved and fuel costs this year will be reduced owing to the lower price of oil from the Fort Norman wells.

THE MARKETS*

CRUDE OIL: *Two independent-refinery buyers reduced price for Cross Lake, Louisiana, crude 10 cents per barrel. Independent buyer increases prices paid for eastern Kansas crude. The company's prices are still below those paid by other companies for same grade crude. Reports indicate there has been some strengthening in spot-crude market in Illinois.*

REFINERY: *Heavy demand for gasoline has eliminated some of the weak spots in tankcar markets. Natural gasolines firm. Better demand for light distillates. Heavy fuels steady.*

TANK-WAGON AND POSTED DEALER: *No general changes. Heavy gasoline sales reported in all areas.*

FINANCIAL: *Oil stocks not participating in upturn in general market. Average of 30 representative stocks for week ending July 15: High, 24.63; low, 23.92; close, 24.38. Week ending July 8: High, 24.38; low, 23.73; close, 24.*

**Detailed information in market section.*

Shipments of Oil Burners Showing Large Increase

NEW YORK, July 17.—Shipments of oil burners during May amounted to 15,009 units, compared with 10,640 in April and 8,732 in May, 1938, according to figures covering 178 manufacturers issued by the Department of Commerce. Shipments in May this year were slightly higher than in 1937. Shipments for the first 5 months of this year amounted to 52,732 units, against 35,793 in the same period of 1938.

New orders received in May totaled 15,284 units, compared with 11,346 in April and 9,025 in May last year. Unfilled orders at the end of May totaled 5,458, compared with 5,181 at the end of April and 2,979 at the end of May 1938. Stocks on hand at the close of May were 20,214 units, against 21,619 a month earlier and 26,866 at the end of the same month a year ago.

Department of Agriculture Alky-Gas Investigation

WASHINGTON, D. C., July 17.—The Department of Agriculture is starting immediately to investigate the possibilities of producing motor fuels from agricultural products, and the studies will include not only blends of alcohol and gasoline but also possible methods of producing gaseous, liquid, and solid motor fuels from agricultural materials. Eventually the work will be concentrated in the new laboratory being built at Peoria, Ill., as a phase of the department's huge research project to develop industrial uses for farm products of all kinds, and officials of the department believe motor fuel production is one of the most promising fields for large-scale industrial utilization of farm products.

The investigation will be under the direction of Dr. David F. Smith, who will start preliminary work on the research project at once. Doctor Smith is a chemist of wide experience in industrial research problems and has been consultant for a number of large chemical companies. For four years he was chief of the physical chemical section of the U. S. Bureau of Mines, where he did pioneer work in the study of possibilities of utilizing coal as fuel for internal combustion engines. More recently he has been professor of chemistry at the University of Buffalo.

Bills for Embargo on Oil To Japan in Congress

WASHINGTON, D. C., July 17.—Several bills designed to place an embargo on exports of petroleum to Japan, which have been pending in Congress, are being considered by the Senate committee on foreign relations. The committee discussed this matter briefly last week but postponed consideration until obtaining the views of the Department of State, particularly on whether such an embargo would violate the 1911 treaty of amity and commerce between the United States and Japan.

Some of the pending measures would simply authorize the president to prevent exportation of any goods which might be used in the violation of any treaty to which the United States is a party. Since this Government is signatory to the nine-power pact guaranteeing the integrity of China, such legislation would probably prohibit exportation of petroleum to Japan.

DEATHS

M. W. McVEY, 45, East Texas independent oil operator, died July 15 at Kilgore from a gunshot wound in the head. He was vice president of the East Texas Oil Association and had been in Tyler among oil men who intervened in the federal court hearing of the Rowan & Nichols Oil Co. suit against the Federal Tender Board.

JAMES M. ROSS, 48, Dallas oil well driller and former New York Athletic Club track star, died July 13. A native of New York, he moved to Dallas 15 years ago and became a partner in the firm of Ross & Brown, Inc.

JOHN WILLIAM ROY CRAWFORD, 71, chairman of the board of Huguenot Trust Co. of New Rochelle, N. Y., formerly a Standard Oil Co. vice president, died recently at New Rochelle. He was at one time vice president in charge of the Rockefeller natural gas interests, a post he held when the dissolution of the company was ordered by the courts. After that Mr. Crawford became head of Union Oil Co., retiring 15 years ago.

SAMUEL C. PHILLIPS, 55, superintendent of the transportation department for the Sinclair Oil Co., operating from the Tulsa office, for the past 22 years, died July 16. He was active as a member of the Automotive Engineers Society.

CHARLES M. CLAEYS, 48, assistant general manager of the export department of Texas Co., died recently at Willimantic, Conn. He joined the corporation 2 years after graduating from Dartmouth College in 1914. He was managing director for many years of Texas Co. S.A.F., France, with headquarters in Paris, and also had been in charge of the company's operations in Europe. He had been in New York since 1936.

No New Policy on Oil Prices Indicated by Federal Suits

By HENRY D. RALPH

WASHINGTON, D. C., July 17. — Simultaneous moves were made by the Department of the Interior last week to increase the government royalty from production in Kettleman Hills, California, and Lance Creek, Wyoming, but officials denied this constitutes any new policy or a drive to increase the price of crude oil generally.

The Kettleman Hills action took the form of a suit brought by the Department of Justice at the request of the Interior Department to recover between $2,500,000 and $3,000,000 alleged to be due from producers in that field for government royalty oil. The Lance Creek action was a notice that a hearing will be held in Washington July 27 before the assistant secretary of the interior on protests against the secretary's order of May 31 setting minimum prices for Lance Creek crude for the purpose of royalty payments.

In both cases it is alleged major producers have established an unreasonably low price for crude compared with oil of comparable grade produced from other fields in the vicinity. It was explained the department is not concerned with the price at which oil is sold so long as royalties are paid on the basis of a fair price, and oil from Kettleman and Lance Creek may be sold at less than the prices set by the department provided royalties are paid on the basis of the established prices. It was also explained the department is not making any general survey of the prices of oil produced on public lands but will investigate all complaints of other producers or other information coming to its notice indicating prices in any field are out of line with prices generally.

THE Kettleman suit arose out of an investigation made by the Geological Survey in 1931 resulting in a departmental order fixing prices for crude oil, gas, and gasoline produced in that field for purpose of computing the Government's royalty. The crude price established was a differential above posted prices in other California fields, the differential being based on the higher gravity of Kettleman crude. The gasoline price was based on a rather complicated formula relating to retail prices in San Francisco filling stations, while the gas price was set at 5 cents per 1,000 cu. ft., the price which prevails on public lands throughout the United States.

These prices were established late in 1931 and were objected to by the producers in the Kettleman field. Since that date, the department claims, these established prices have not been met, with resulting loss to the Government in royalties. The suit is in the nature of an argument between landlord and tenant over the terms of a rental contract although the suit also charges that major companies operating in the Kettleman field have conspired to monopolize the market and keep prices below a reasonable level. Apparently there is no disagreement as to the facts except that the Government is preparing to charge that some of the sales were made to subsidiary or controlled corporations and do not represent arm's-length transactions. Some producers in the Kettleman field have paid the stipulated royalty under protest, while others have not and have protested against being billed for royalties on the prices set by the Government.

This will be a test to determine the power of the Interior Department to establish royalty oil prices. Only one previous case is on record, that of Wilbur v. Texas Co., decided April 7, 1930, by the Court of Appeals for the District of Columbia and involving royalty oil in the Oregon basin. In that case the company sought an injunction to prevent the secretary of the interior from establishing royalty prices, and the injunction was granted in the lower court but vacated on appeal. Although the Supreme Court denied certiorari that case is not considered as establishing the law beyond question.

The Lance Creek case grew out of a considerable decline in the price of oil from that field last spring. The Geological Survey made an investigation and on May 22 recommended a minimum price be established for the purpose of computing royalties due to the United States on crude oil produced from federal lands in that field at 4 cents per barrel above the price regularly posted by the major purchasers of crude oil in the Mid-Continent area for crude of 40° A.P.I. gravity. On May 31 Secretary Ickes issued an order, effective July 1, 1939, establishing this price, which would currently put Lance Creek crude at a minimum of $1.14 per barrel. Objections were filed by Continental Oil Co., Buck Creek Oil Co., Ohio Oil Co., Argo Oil Corp., Adams Oil & Gas Co., and Freemont Corp. The secretary set these protests for hearing on July 27, but meanwhile ordered producers in the Lance Creek field be billed for royalty on the basis of the price fixed but with a notation that payments are subject to adjustment upon ajudication of the appeals.

Oil Compact

LEGISLATION ratifying extension of the Interstate Oil Compact to September 1, 1941, has been approved by Congress and sent to the White House.

In contrast to the opposition which has been raised by certain interests against the compact in other years when its ratification was before Congress, there was absolutely no discussion on the legislation this year in either House or Senate, and the legislation was recommended by the committees without hearings and with only the briefest consideration. The report of the Senate committee on mines and mining explained the compact in the following language:

"This compact was originally approved by the Senate on August 24, 1935. It was then hoped that the oil-producing states, acting together under this compact, would be able to conserve this natural resource, prevent its waste, and to aid the petroleum industry to achieve a stable situation. That it has had this effect has been demonstrated during the 4 years the compact has been in force.

"Interstate compacts such as this one are in complete harmony with the spirit of our American form of government. They preserve the rights of each separate state at the same time that they enable each of these states to work together on a sound program which all of them accept. They involve no use of force. They impose no prohibitions beyond those which are imposed by the states themselves. They enable the various states, signatory to such compacts, to do those things which are necessary but which might not be done by any of them separately or by any group of them without this consent of Congress.

"This compact definitely states that nothing in it would authorize the states to limit the production of oil or gas for the purpose of stabilizing or fixing the price thereof, to create a monopoly or to promote regimentation."

Social Security Ruling

WHERE the expenses of a salesman exceed his commissions for any calendar year it is not permissable to carry over and deduct such excess from commissions payable within the suceeding year for the purpose of computing the salesman's taxable wages under the Social Security taxes, under a ruling of the Bureau of Internal Revenue. The ruling was made in connection with Title 9 of the act, covering the tax on employers of eight or more for unemployment compensation, but under a similar ruling recently it was held that for purposes of the old-age retirement tax under Title 8 the expenses incurred by a salesman in excess of commissions during the last quarter of a calendar year may not be carried over into the succeeding year. The bureau ruled:

"The term 'wages' as defined in Title 9 includes 'all remuneration for employment.' Amounts paid to traveling salesmen or other employes as allowances or reimbursements for traveling or other expenses incurred in the business of the employer constitute wages only to the extent of the excess of such amounts over the expenses actually incurred and accounted for by the employe. In 1936 it was held that where a salesman is paid a certain amount to cover his salary and expenses incurred in his employer's business, the basis for computing the tax is the total amount paid or payable minus the expenses actually incurred and accounted for by the salesman.

"Since the tax imposed by Title 9 is specifically levied upon a calendar year basis it is held that where a salesman's expenses exceed his commissions for any taxable year, such excess may not be carried over within the subsequent year for the purpose of computing the wages of the salesman for that year. Furthermore, although only the total wages payable by an employer with respect to employment within a calendar year are required to be reported in the return filed for that year, in computing that total, the wages of each individual employe must be separately determined. That is, the employer may not compute the total wages by deducting the total expenses incurred by all employes from the total commissions payable for employment during the year."

Bureau's Report Reflects Very Favorable Demand

The indicated demand for domestic crude petroleum in May was 111.7 million barrels, an increase of 5 per cent over May 1938, according to the Bureau of Mines' report just issued. This demand was supplied by a production of 110.5 million barrels and a crude stock decrease, including California heavy crude, of about 1.1 million barrels. The export demand for crude amounted to 8.6 million barrels, a 10 per cent gain over May 1938. Runs to stills were 3,411,000 bbl. daily, and represented the highest monthly average since September 1937. The May demand for foreign crude petroleum approximated 4 million barrels, representing a 72 per cent increase over May 1938.

Refined products—As compared to May 1938, the total domestic demand for all oils showed a gain of about 10 per cent while refined exports increased by almost 14 per cent.

The indicated domestic demand for motor fuel was 49,547,000 bbl. or 10 per cent more than the demand a year ago. Exports of motor fuel were 4 per cent below last year. The larger demand for motor fuel in May only partially offset the unexpectedly low demand in April. Domestic demand for the first 5 months of 1939 has been 6 per cent greater than last year. Finished gasoline stocks decreased by 3.3 million barrels in May.

The total demand for fuel oils continued to run well ahead of last year. For the first 5 months of 1939, the demand for residual fuel was about 11 per cent greater than for the same period in 1938, while the demand for gas and distillate fuels was 16 per cent greater. In May 1939, total residual demand was 15 per cent greater than for May 1938 and gas and distillate demand was 16 per cent larger.

According to the Bureau of Labor Statistics, the price index for petroleum products in May 1939 was 52.5, compared with 51.9 in April and 56.4 in May 1938.

The crude-oil capacity represented by the refinery data in this report was 4,120,000 bbl.; hence the operating ratio was 83 per cent, compared with 80 per cent in April and 79 per cent in May 1938.

United States Supply and Demand—Crude Oil (Bbl.)

May 1939

5 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	INDICATED DOMESTIC DEMAND‡	EXPORTS	STOCKS REFINABLE CRUDE MAY 31
1939	530,740,000	528,188,000	*2,552,000	*0.5	518,784,000	11,956,000	499,070,000	29,118,000	‖278,087,000
Daily average	3,515,000	3,498,000			3,436,000	79,000	3,305,000	193,000	
1938	519,024,000	522,284,000	3,260,000	0.6	508,569,000	10,455,000	489,531,000	32,753,000	298,983,000
Daily average	3,437,000	3,459,000			3,368,000	69,000	3,242,000	217,000	
Increase, 1939	11,716,000	5,904,000			10,215,000	1,501,000	9,539,000	†3,635,000	†20,896,000
	2.2%	1.1%			.02%	14.4%	.02%	†11.1%	†.07%

Supply and Demand—Refinery Products Motor Fuel (Bbl.)

5 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	DOMESTIC DEMAND‡	EXPORTS	STOCKS MAY 31§
1939	241,117,000	227,342,000	*13,775,000	*6.1	241,117,000		208,406,000	18,936,000	84,554,000
Daily average	1,597,000	1,505,000			1,597,000		1,380,000	125,000	
1938	228,979,000	216,094,000	*12,885,000	*6.0	228,979,000		196,461,000	19,633,000	87,535,000
Daily average	1,518,000	1,431,000			1,518,000		1,301,000	130,000	
Increase, 1939	12,138,000	11,248,000			12,138,000		11,945,000	†697,000	†2,981,000
	5.3%	5.2%			5.3%		6.1%	†3.5%	†3.4%
Kerosene									
1939	28,498,000	29,746,000	1,248,000	4.2	28,498,000		26,492,000	3,254,000	6,551,000
1938	27,697,000	27,153,000	*544,000	*2.0	27,697,000		23,497,000	3,656,000	7,627,000
Increase, 1939	801,000	2,593,000			801,000		2,995,000	†402,000	†1,076,000
	2.9%	9.5%			2.9%		12.8%	†11.0%	†14.1%
Gas Oil and Residual Fuel Oil									
1939	197,082,000	211,940,000	14,858,000	7.0	190,213,000	6,869,000	191,168,000	20,772,000	124,557,000
1938	195,267,000	188,453,000	*6,814,000	*3.6	186,674,000	8,593,000	169,523,000	18,930,000	97,609,000
Increase, 1939	1,815,000	23,487,000			3,539,000	†1,724,000	21,645,000	1,842,000	26,948,000
	0.9%	12.4%			1.9%	†20.1%	12.8%	9.7%	27.7%
Gas Oil and Distillate Fuels									
1939	66,195,000	72,226,000	6,031,000	8.3	66,024,000	171,000	59,147,000	13,079,000	27,813,000
1938	62,051,000	62,326,000	275,000	0.4	62,051,000		49,724,000	12,602,000	18,451,000
Increase, 1939	4,144,000	9,900,000			3,973,000		9,423,000	477,000	9,362,000
	6.7%	15.9%			6.4%		11.0%	3.8%	50.7%
Residual Fuel Oils									
1939	130,887,000	139,714,000	8,827,000	6.3	124,189,000	6,698,000	132,021,000	7,693,000	96,744,000
1938	133,216,000	126,127,000	*7,089,000	*5.6	124,623,000	8,593,000	119,799,000	6,328,000	79,158,000
Increase, 1939	†2,329,000	13,587,000			†434,000	†1,895,000	12,222,000	1,365,000	17,586,000
	†1.7%	10.8%			†0.3%	†22.0%	10.2%	21.5%	22.2%
Lubricating Oils									
1939	13,241,000	13,308,000	67,000	0.5	13,241,000		9,172,000	4,136,000	7,630,000
1938	13,075,000	12,334,000	*741,000	*6.0	13,075,000		8,298,000	4,036,000	8,255,000
Increase, 1939	166,000	974,000			166,000		874,000	100,000	625,000
	1.3%	7.9%			1.3%		10.5%	2.5%	7.6%
Petroleum Wax (Lb.)									
1939	196,042,000	211,457,000	15,415,000	7.6	182,840,000	13,202,000	111,433,000	100,024,000	113,925,000
1938	198,936,000	203,102,000	4,166,000	2.1	183,400,000	15,536,000	134,644,000	68,458,000	140,826,000
Increase, 1939	†2,894,000	8,355,000			†560,000	†2,334,000	†23,211,000	31,566,000	26,901,000
	†1.5%	4.1%			†0.3%	†15.0%	†17.2%	46.1%	19.1%

*Excess supply. †Decrease. ‡Crude oil only. §Includes finished and unfinished refinery gasoline and natural gasolines. ‖Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments. ‖Does not include 14,492,000 bbl. of heavy oils in California. Comparable figure for May 31, 1938, 17,353,000 bbl.

Crude Oil Run to Stills and Total All Oils (Bbls.)

MAY—	TOTAL IMPORTS§	TOTAL EXPORTS§	TOTAL CRUDE TO STILLS	PER CENT YIELD GASOLINE‡	NATURAL GASOLINE PRODUCTION	TOTAL SUPPLY ALL OILS*	TOTAL DEMAND ALL OILS*	STOCKS ALL OILS MAY 31*
1939	22,163,000	77,146,000	491,386,000	44.6	6,212,000	562,541,000	558,027,000	558,984,000
Daily average	147,000	511,000	3,254,000	....	41,000	3,725,000	3,696,000	
1938	20,882,000	79,658,000	476,877,000	43.5	6,548,000	551,036,000	524,553,000	590,469,000
Daily average	138,000	527,000	3,158,000	....	43,000	3,649,000	3,474,000	
Increase, 1939	1,281,000	†2,512,000	14,509,000	....	†336,000	11,505,000	33,474,000	†31,485,000
	6.1%	†3.2%	3.0%	....	†5.1%	2.1%	6.4%	†5.3%

*Total all oils includes crude and refined products, natural gasoline and benzol. Stocks May 31, 1939, represented 170 days' supply which compared to 157 days on the same date in 1938. †Decrease. ‡Does not include natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

INTERNATIONAL

Britain Produced 2,800,000 Bbls. of Gasoline From Coal

The United Kingdom produced approximately 2,800,000 bbl. of motor spirit (gasoline) from coal during 1938. This information was revealed by the secretary of mines in reply to a parliamentary question. There were 42,300,000 Imperial gal. produced by the hydrogenation process; 54,700,000 Imperial gal. by high-temperature carbonization, and 1,300,000 Imperial gal. by the low-temperature carbonization process. There were 13,900,000 Imperial gal. of light oils other than gasoline produced by the high-temperature carbonization process and 105,000,000 Imperial gal. of creosote and heavy oils by the combined carbonization methods.

Venezuelan Output At Highest Point In Past 5 Years

Venezuelan production has increased to 16,210,193 bbl., a daily average of 540,340 bbl. last month. This is the highest total and daily average production registered by Venezuela during the past 5 years. There were increases at Quiriquire, Mene Grande, Pedernales, Concepcion, El Mene, and La Paz. Remainder of the fields registered a decline. Details of production by fields and companies appear below.

VENEZUELA PRODUCTION

Field—	June 1939	June 1938	Dail Av. June 1939
Lagunillas	8,996,187	6,332,974	299,874
La Rosa	936,403	2,642,944	31,213
Tia Juana	1,713,604	2,549,401	57,120
Quiriquire	2,173,992	2,149,626	72,466
Mene Grande	893,882	1,226,017	29,796
Tarra	454,795	436,134	15,160
Bachaquero	242,347	.....	8,078
Cumarebo	218,382	212,667	7,279
Temblador	215,038	220,222	7,168
Pedernales	148,039	147,896	4,935
Concepcion	85,597	74,952	2,853
El Mene	87,090	54,480	2,903
LaPaz	44,837	77,736	1,495
Total	16,210,193	16,125,049	540,340
By companies—			
Lago Petroleum Corp.	5,431,762	4,645,935	181,059
Venezuela Oil Concessions	4,557,459	4,608,164	151,915
Standard of Venezuela	2,845,610	2,858,052	94,854
Mene Grande Oil Co.	1,885,000	2,243,100	62,833
Caribbean Petroleum Co.	893,887	1,226,017	29,796
Colon Development Co.	454,795	436,134	15,160
British Controlled Oilfields	87,090	54,480	2,903
N. Venezuela Petroleum Co.	54,595	53,167	1,820
Total	16,210,193	16,125,049	540,340
Total, May 1939			17,540,639
Daily Average, May 1939			565,827
Daily Average, June 1938			537,500

Exports of Crude and Principal Products To Japanese Ports

The primary purpose of the statistics contained in this report of the Bureau of Mines is to bring up to date again the tabulation of exports of petroleum and petroleum products from the United States to Japan. Data from September 1938 to May 1939, the latest month for which comparable data are presently available, are shown in Table 1.

The statistics published in the past and continued in Table 1 of this report represent shipments from the United States to Japan but heretofore it has been assumed that no significant quantities were exported from any other section of the United States than California, so that in effect the statistics represented California exports to Japan. Investigation during a trial period substantiated this assumption. However, during the past several months a part of the Japanese trade is thought to have been diverted to the Gulf Coast area and requests have been received for data showing the precise amounts shipped from California. Unfortunately, the Bureau of Foreign and Domestic Commerce reports from which the data were compiled do not supply the necessary segregation. Consequently, exports from California to Japan and Kwantung have been compiled from the shipment data submitted by the California exporters for publication in the monthly California Petroleum Statements. Shipments to Kwantung were included with those to Japan because it was not possible to segregate them. These data are presented for the first 5 months of 1939, in Table 2. Packaged goods are not included in Table 2 but are believed to be insignificant.

It is not possible to compare the shipments from California to Japan and Kwantung, as shown in Table 2, with the shipments from the United States to Japan, as shown in Table 1, because of the inclusion of the Kwantung shipments in Table 2. Therefore, a third table, Table 3, has been prepared from Bureau of Foreign and Domestic Commerce reports, combining exports from the United States to Kwantung with the exports from the United States to Japan to show total exports from the United States to Japan and Kwantung. Comparing Table 2 with Table 3 should indicate approximately California's percentage of the United States exports to Japan. It must be realized that the data for any one month cannot be satisfactorily compared for several reasons, principally that tankers loading near the beginning or end of the month may be included in different months by the different sources of information. The totals shown at the bottom of Table 3 indicate that during the first 5 months of 1939 exports from the United States to Japan and Kwantung exceeded California exports in the amounts of 363,000 bbl. of crude, 312,000 bbl. of gasoline, 66,000 bbl. of kerosene, 320,000 bbl. of gas oil and distillate fuel oils, and 54,000 bbl. of heavy fuel.

Latest data available to extend these tables will be published each month in the California Petroleum Statement in the future.

TABLE 1—EXPORTS OF PETROLEUM AND PETROLEUM PRODUCTS FROM THE UNITED STATES TO JAPAN—1938

(Barrels)

	Crude petroleum	Gasoline	Kerosene	Lubricants	Gas oil and distillate fuel oil	Fuel oil
September	826,234	72,754	65	(*)	460,019	433,152
October	1,163,713	123,742	26	(*)	568,287	348,589
November	1,154,206	86,160	..	(*)	344,711	153,530
December	1,136,315	184,668	..	(*)	341,692	319,935
Total 1938	21,289,572	1,447,825	880	(*)	5,297,464	3,029,586
1939						
January	989,621	169,337	..	(*)	223,932	355,883
February	1,360,155	149,751	..	(*)	328,110	139,003
March	1,350,811	114,772	..	(*)	500,970	511,469
April	1,361,948	71,647	..	(*)	441,514	367,718
May	1,753,607	72,652	..	(*)	968,936	566,807
Total 5 months	6,816,142	578,159	..	(*)	2,463,462	1,940,880

TABLE 2—EXPORTS OF PETROLEUM AND PETROLEUM PRODUCTS FROM CALIFORNIA TO JAPAN AND KWANTUNG—1939

(Barrels)

January	1,123,000	154,000	..	70,000	208,000	331,000
February	1,262,000	141,000	..	104,000	360,000	300,000
March	1,299,000	111,000	125,000	5,000	303,000	496,000
April	1,416,000	141,000	20,000	14,000	420,000	279,000
May	1,801,000	36,000	..	143,000	871,000	481,000
Total 5 months.	6,901,000	583,000	145,000	336,000	2,162,000	1,887,000

TABLE 3—EXPORTS OF PETROLEUM AND PETROLEUM PRODUCTS FROM THE UNITED STATES TO JAPAN AND KWANTUNG—1939

January	1,089,000	255,000	..	(*)	224,000	356,000
February	1,451,000	185,000	106,000	(*)	346,000	139,000
March	1,519,000	225,000	105,000	(*)	501,000	511,000
April	1,362,000	157,000	..	(*)	442,000	368,000
May	1,843,000	73,000	..	(*)	969,000	567,000
Total	7,264,000	895,000	211,000	(*)	2,482,000	1,941,000
†Total	6,901,000	583,000	145,000	336,000	2,162,000	1,887,000

*Not yet available. †Total first 5 months, Table 2. (To give approximate comparison of California exports with United States exports.)

Production in Poland Shows Small Gain So Far This Year

Crude oil production in Poland during March amounted to 335,010 bbl., a small increase over 321,465 bbl. produced for the same month in 1938. For the first 3 months of this year crude production totaled approximately 986,500 bbl., an increase of about 20,000 bbl. over output for the same 3 months in 1938.

Production in Egypt

Petroleum production in Egypt during the month of April totaled approximately 333,605 bbl. compared to 334,985 bbl. in March. Production from Egypt has been increasing approximately 20 per cent during the first six months of this year.

Gulf Coast Field Soil Survey

Extracting soil samples in a modern soil-analysis laboratory

By D. H. STORMONT

ADOPTION of soil surveys as another tool for use in the exploration for petroleum is being aided greatly by the rapidity with which prospects recommended by surveys are proved or disproved by drilling. Commercial application of soil surveys in the United States has become fairly widespread only within the past year. Thus while numerous tests have been drilled in areas recommended by chemical prospecting, data are as yet relatively meager and those furnished by the drilling of each additional well tend to further establish applications and limitations of the method.

One new field recently discovered in San Patricio County, Southwest Texas, was favorably recommended by a soil survey immediately after the well was spudded in. This is the East Mathis pool discovered early in June by Seaboard Oil Corp. No. 1 Persons on the J. J. Welder ranch, A.B.&M. Survey No. 6, Section 29, George H. Paul subdivision. Hole was bottomed at 6,348 ft. with production being obtained through perforated casing at 5,260-68 ft. On a 24-hour potential test the well flowed 42 bbl. per day through ¼-in. choke with tubing pressure of 310 lb. and casing pressure 610 lb.

Importance of the Discovery

While the No. 1 Persons may be classified as a comparatively small producer, as well as the productive limits of the field as outlined by the survey, considerable interest and importance are attached to the new discovery since a soil survey recommendation was proved by the drill. The test was not drilled on the basis of the soil survey recommendation, work already having been started when the survey was made, but the area was pronounced favorable long before the drill reached the sand. Thus feasibility of soil surveys in oil prospecting was again proved even though the method cannot take full credit for the discovery. Chief results of the survey, however, is that the operator has a much better idea of the field's extent, which could result possibly in the prevention of several dry holes being drilled.

The new discovery is on a block of several thousand acres which was worked extensively with geophysical instruments. It is on the same general trend with the Sinton and Plymouth fields with production believed to be from a sand of the Marginulina-Frio formation. A second test was recently completed by Seaboard about 9,500 ft. northeast of the No. 1 Persons; the No. 1 Otto Blumberg in the W½ NE Section 13. Since the test is well within limits as delineated by the G.S.I. soil survey, the new test was watched closely by operators in that area.

The Seaboard No. 1 Blumberg, completed early last week, resulted in a large gas producer rated at 25,000,000 cu. ft. daily with a very small quantity of distillate production. Hole was carried to below 5,600 ft., thin gas sands being found at 4,900 and 5,600 ft. The test was then plugged back to 4,417-22 ft. where a 20-ft. gas sand was encountered, the casing perforated and the well completed at that depth.

A liquid hydrocarbon map of East Mathis area, as prepared from the soil survey data, is shown in

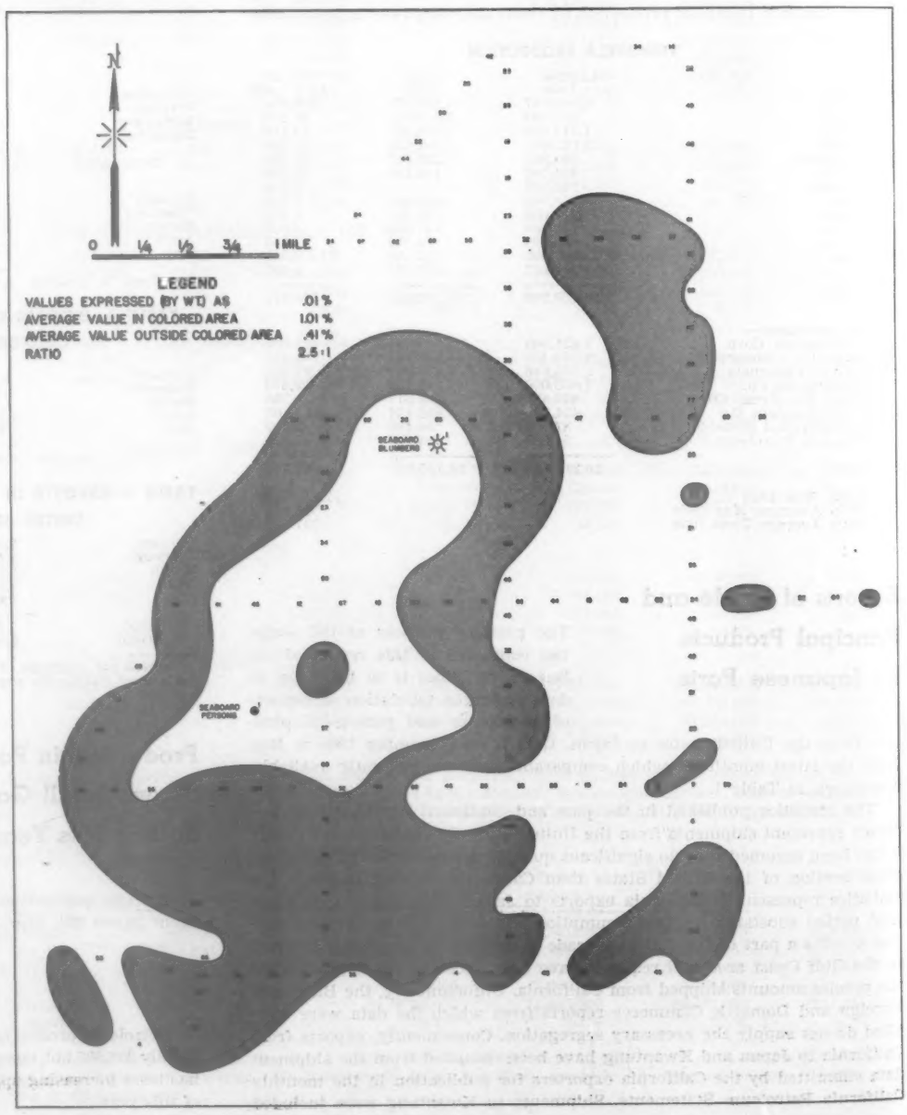


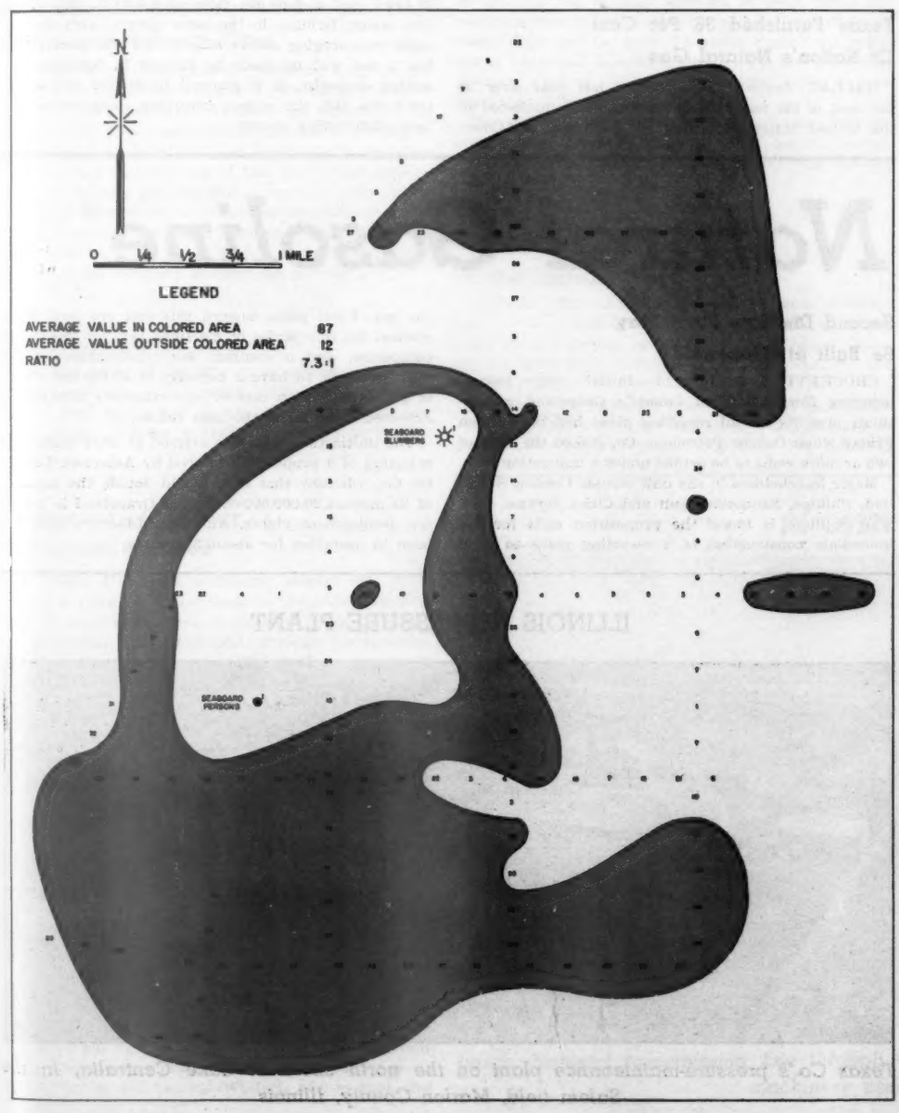
Fig. 1—Liquid hydrocarbon map of the East Mathis area, showing location of the two wells completed inside the halo

Is Opened on Information

Fig. 1 and a mineralization map of the same area is shown in Fig. 2. Comparison of the two concentration patterns reveals the excellent check between the two entirely independent methods of analyses, one of which is based on the organic constituents and the other on inorganic. The colored areas of both maps include values above a certain minimum. Thus by comparing the average value inside the colored area to the average background value, significance of the prospect is determined.

In the liquid hydrocarbon map concentration values over 0.7 per cent by weight (7,000 parts per million) are included in the colored halo and other areas of high liquid hydrocarbon concentration. Background values are less than 0.7 per cent. Average value of the colored area is 1.01 per cent and that outside the colored area is 0.41 per cent. Thus the ratio of the average value inside the colored area to that of the background value is on the order of 2.5 to 1.

In the mineralization map (Fig. 2) average value of the colored area is 87 while mineral values outside the colored area average 12. Thus ratio of the colored area average value to that of the background is 7.3 to 1. Or, in other words, concentration of minerals is over 700 per cent higher in the colored areas.



That the migration of gases from oil and gas accumulations is essentially vertical, as is generally accepted by authorities on the subject, is borne out by the comparatively narrow width of the high concentration areas. It will be noted that liquid hydrocarbon and mineral values of the sample stations (taken every one-fifth mile) rise very abruptly as the edges of the buried accumulation are crossed. In this form of pattern, commonly called a halo and usually associated with closed anticlinal structures, reason for its shape is explained by McDermott ("Concentrations of Hydrogenation in the Earth," read at annual meeting of S.E.G., March 23, 1939, Oklahoma City, Okla.) as being due to the oil "clogging" the formation immediately above it to form a more impervious cap. This cap retards the escape of gases over the main part of the structure and causes a high concentration of gases leaking from the peripheral edges. Thus the liquid hydrocarbon and mineral values are low over the producing portion of the structure and high around the margins.

Relations of Minerals to Prospecting

In describing the value of minerals as related to chemical prospecting of oil deposits, McDermott states, "in moving toward the surface the gases will carry some of the subsurface waters with them. In so doing they will also transport some of the minerals dissolved in these waters. The relative quantities of different minerals so transported will of course depend on their concentrations in the subsurface waters, also their relative densities and perhaps their molecular size, and finally on the proximity of the particular waters to the surface. The concentration of these minerals will naturally be greatest where the leakage of gas is greatest and as a result should be of service in exploring for buried oil and gas deposits. Concentrations of these minerals near the surface of the earth are very appreciable and are significantly related to buried oil and gas fields."

In addition to minerals and liquid hydrocarbon constituents, analyses may be also made for the ethane content and for the surface and subsurface wax content. However, since the liquid hydrocarbons found immediately below the surface occur in much greater quantities than any of the other hydrocarbons, maps or cross sections based on liquid values are thought to be more significant than those based on solid or gaseous constituents. While waxes are found at the surface of the earth in quantities of the order of magnitude of 100 to 1,000 parts per million by weight, and ethane in quantities varying from 0.02 to 0.10 parts per million by weight, liquid hydrocarbon values at least as great as 10,000 parts per million by weight are found over the edges of some fields. Thus chance of error is greatly reduced by working with the constituents occurring in much larger quantities.

While the soil survey in connection with the East Mathis area resulted primarily in delineating the producing limits of the field, experience shows that the surveys also offer: (1) A direct exploration method. (2) A method for locating stratigraphic traps. (3) A method applicable to new and unexplored areas. (4) A method capable of discovering structures primarily of the fault type which are poorly indicated by other exploration methods. (5) A supplementary method for use in conjunction with other methods of exploration.

Fig. 2—Mineralization map of the East Mathis area. Comparison of the concentration with that of Fig. 1 shows an excellent check was obtained

Natural Gas News

Federal Power Commission Sued by Companies

DENVER, Colo.—A suit to enjoin the Federal Power Commission from assuming jurisdiction over rates they charge for natural gas in Colorado and Wyoming from Texas gas fields has been filed by Canadian River Gas Co. and Colorado Interstate Gas Co. in the United States Circuit Court of Appeals for the Tenth District at Denver. This action was taken on the eve of the beginning of an appraisal of the plaintiff's properties by the commission in cooperation with the city and county of Denver.

The companies pipe gas from Amarillo to Denver through a line completed in 1928 at a reported cost of $20,000,000, and wholesale the gas to distributing companies in cities and towns at the city gates and also to Colorado-Wyoming Gas Co. which supplies northern Colorado and Cheyenne, Wyoming. The line was built after Public Service Co. of Colorado was granted a franchise for natural gas in 1927 and contracts for the supply had been signed by it and Colorado Interstate company.

The city for some time has been endeavoring to obtain low gas rates, but Public Service Co. claimed its hands were tied on account of the 40-cent rate it had to pay at the city gate. The city on December 22, 1938, filed a complaint with the power commission and on May 14, this year, the commission on its own account entered an order for an investigation of the rates charged by the Canadian River and Colorado Interstate companies, finding they were natural gas companies within the meaning of the natural gas act of 1938 and subject to the commission's control of rates.

The two companies and Colorado-Wyoming Gas Co. petitioned the commission for a rehearing and a stay of the investigation. They alleged it was null and void and in violation of the fifth amendment to the constitution because a hearing was not had before the order and that the companies are not engaged in a business affected with a public interest so as to be subject to jurisdiction of the commission. The petition was denied on the ground that the law does not require such a hearing and plans went forward for a complete appraisal of the properties prelimanry to a hearing on any proposed change in rates.

Engineers of the power commission were in Colorado Springs the past week preparing to begin the appraisal, and the Denver council appropriated funds to send two of its engineers to accompany and assist them. The Canadian River and Colorado Interstate companies then filed their complaint seeking to stay the proceedings, but the court has not yet issued any order and the engineers, accompanied by representatives of the plaintiffs and of Ford, Bacon & Davis, the firm which built the line, began their work on July 10.

The plaintiffs took much the same position in their suit as in the petition to the commission last May, it being their contention they are private carriers delivering gas to certain customers under contracts signed before the natural gas act was passed by congress and are not subject to the jurisdiction of the commission.

Plan Carbon Black Plant In the Cut Bank Field

DENVER, Colo.—Construction of a plant to extract carbon black from gas in the Cut Bank field, northern Montana, is planned by a new company, Huber-Montana Co., formed recently by the J. M. Huber Corp., Nadeau Brothers, K. D. Pardee, and M. H. Newell.

A survey of the gas resources held by the new company in the north field will be made by John Van Sant, chief geologist for the Huber concern. Operators plan to construct an absorption plant to extract butane and natural gasoline from the gas before burning to recover the carbon black. A chemical laboratory is also to be erected to classify and handle the product. Approximately $500,000, it is said, will be expended.

Several wells are scheduled for early drilling in the Darling pool of the North Cut Bank area where gas production is obtained from the Moulton sand.

Directors of the new company include Walter David, H. W. Price, and E. M. Eckhart, of Borger, Tex.; and George Nadeau, K. R. Pardee, and M. H. Newell, of Cut Bank, Mont.

El Paso Rate Reduction Ends Long Litigation

EL PASO, Tex.—New gas rates saving consumers $100,000 a year became effective in El Paso July 1.

The new rates were offered by Texas Cities Gas Co., a subsidiary of Lone Star Gas Co., and were accepted by the city council after being approved by Railroad Commissioners Jerry Sadler and Ernest O. Thompson.

Acceptance of the new rates will end litigation in federal court in which the gas company obtained an injunction halting enforcement of a 55-cent rate ordinance. The injunction was quashed by higher courts and remanded to the District Court.

El Paso domestic users will get also $25,000 cash rebate representing a reduction granted Texas Cities Gas Co. by the El Paso Natural Gas Co., the pipe line firm, in the gate rate last September.

Texas Furnished 36 Per Cent Of Nation's Natural Gas

DALLAS, Tex.—Texas furnished last year over 36 per cent of the natural gas produced and marketed in the United States, according to the Texas Mid-Continent Oil and Gas Association, which adds that Texas is not only the largest producer of gas but also the heaviest consumer.

Interstate movement of natural gas involves large receipts from surrounding states to offset heavy shipments of the state. Nearly 76 per cent of all the marketed natural gas production in Texas is consumed within the state for industrial and domestic purposes.

As a result of the state's large natural gas production, numerous allied industries have been created which furnish employment to thousands of Texas people. Among these are the production of natural gasoline from gas and the manufacture of carbon black from "sour" gas. These allied industries, along with the natural gas business, comprise a substantial part of the state's sources of tax revenue.

Since 1927, the production of natural gas in Texas has increased from 17 per cent to 36 per cent of the nation's output; natural gasoline production within the same period increased from 19 per cent to nearly 32 per cent of the national supply, while the production of carbon black has in this 11-year period shown an increase from 28 per cent to 82 per cent of the entire output of carbon black in the United States.

Natural Gas Franchise Voted At Castor, After Test

CHATHAM, Ont.—Rate payers of the town of Castor, southeast of Edmonton, have approved a 10-year gas franchise to Castor Holding, Ltd., which will start drilling a test for gas near the town before the end of July. A test drilled in 1913-14 in NE¼ Section 26-37-14w4, got a fair gas flow at 1,430 ft. but drilled into water. Drilling in the same general area encountered encouraging shows of gas and oil. Location of No. 1 test will be made by Russell V. Johnson, consulting geologist. It is planned to deliver gas to the town this fall, the project involving construction of a local distributing system.

Natural Gasoline

Second Distillate Plant May Be Built at Grapeland

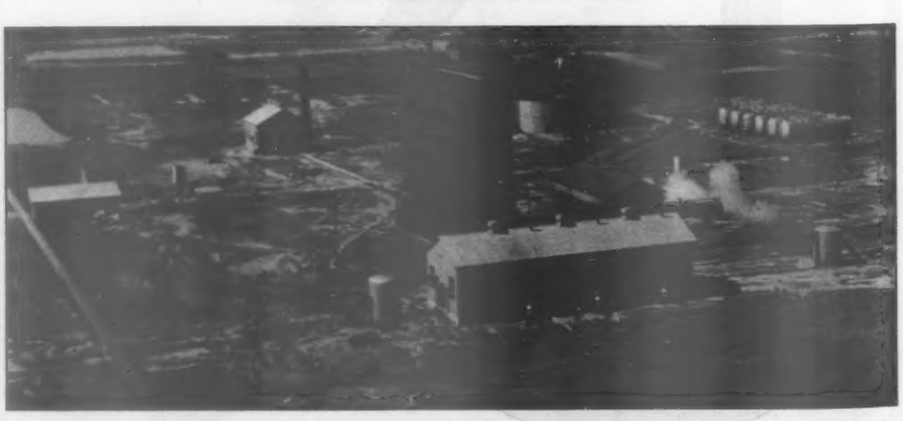
CROCKETT, Tex., July 14.—Initial step toward bringing North Houston County's Grapeland gas-distillate area its second recycling plant had been taken Friday when Condor Petroleum Co. staked the first of two or more wells to be drilled under a unitization plan.

Major leaseholders in the unit include Condor, Stanolind, Phillips, Saltmount, Sun and Cities Service.

If distillate is found the proposition calls for the immediate construction of a recycling plant to strip the gas. Final plans toward this end are now being worked out in a series of meetings between the major companies, and a contract for construction of the unit, probably to have a capacity of 20,000,000 cu. ft. of gas daily with a cost of approximately $200,000, is expected to be let in the near future.

The unitization plan was arrived at after study and rejection of a proposition offered by American Liberty Oil Co., whereby that firm would double the capacity of its present 20,000,000-ft. unit at Grapeland in return for development rights. American Liberty's unit has been in operation for about 2 months.

ILLINOIS REPRESSURE PLANT



Texas Co.'s pressure-maintenance plant on the north shore of Lake Centralia, in the Salem field, Marion County, Illinois

Refinery Expansion

Potter Brothers Propose New Refinery for Illinois

Potter Bros. Pipe Line Co. last week announced that it will construct a refinery having 2,500-bbl. capacity along the Missouri & Illinois Railroad right of way west of Salem, Ill., and northeast of the Salem field.

Potter Bros. has been purchasing between 2,000 and 2,500 bbl. daily from independent operators in the Salem pool; this oil has been shipped by tankcar to various refineries but will now go to the Salem plant for processing.

Cushing Refinery Completes New 5,000-Bbl. Skimming Unit

CUSHING, Okla.—The Cushing Refining & Gasoline Co. will complete this week a 5,000-bbl. per day skimming unit to work in conjunction with its 2,000-bbl. Dubbs cracking unit. The new skimming equipment provides slightly more capacity for the plant but essentially is designed to replace older equipment. Operation of the new unit is expected to be placed upon a routine schedule within the next week.

Milwaukee Investigating Advantages Of Proposed Refinery There

Attempt of the Wisconsin Oil Refining Corp. to get a permit for the construction of a refinery at the town of Lake near Milwaukee awaited the report of the committee of townsmen. The committee is investigating efforts, both beneficial and objectionable, of refineries in other communities of like size. Final disposition of a petition for rezoning a tract on Lake Michigan from agricultural to industrial uses will be made by the county board after a hearing which will take place about July 20. D. E. Foster of St. Louis, Mich., is head of the company seeking the permit.

Illinois Refinery on Stream

The new plant of the Ray Hose interests at Pana, Ill., went on stream last week using crude from the Louden field in Fayette County. Capacity of the new plant, which includes a cracking unit, is 4,000 bbl. daily.

Construction of Refinery At Alamosa Projected

DENVER, Colo.—An additional market for crude from the Gramps (Price) pool in Archuleta County, near the New Mexico line, is reported being developed by the William E. Hughes estate through the construction of a refinery at Alamosa. The field was developed 3 years ago by the Hughes estate and 9 or 10 wells are reported to have been drilled to production, some making as high as 2,000 bbl. initial from the Dakota sand at around 1,400 ft. The estate owns the land in fee, drilled the wells on its own account, built a pipe line to Chama, N. M., and built storage to hold supplies for winter shipments by rail. Continental Oil Co. has been taking what oil has been shipped out for its refinery at Denver. Little is known concerning the pool as the operator is reluctant to give out information. Some of the major companies attempting to make maps of the region have been unable to ascertain location of all the wells in relation to each other. The field is guarded and strangers are not admitted. Lafayette M. Hughes, manager of the estate, was out of the city when attempts were made to verify the report. At his office it was stated: "Mr. Hughes doesn't give out any information." It is known, however, that the estate has figured extensively on building a refinery at some point centrally located. Alamosa is on the Denver & Rio Grande Western narrow-gage line which dips down into New Mexico and the rail haul from Chama to that city is only 92 miles. It is a marketing center for a large district. Mr. Hughes is reported erecting additional storage at Chama and to be drilling or preparing to drill on leases in northern New Mexico on the Jacarillo Indian reservation which recently was opened for leasing by the tribe under an arrangement with the Indian Department.

Recent Report Shows Gain in California Gasoline Stocks

SACRAMENTO, Calif.—The highest monthly gain in California gasoline sales for more than a year was recorded in May by the state Board of Equalization.

Gasoline distributors reported the sale of 156,751,696 gal. of gasoline on which a tax of $4,702,550.88 was levied. This represented a gain of $406,239.33, or 9.46 per cent, over the same month of last year. The May income also was substantially higher than the $4,406,313.03 collected in gasoline taxes during April.

Out of five months of the current year four have shown substantial gains in taxable gasoline sales as compared to the same months of 1938.

Application Renewed for Saskatoon Gas Franchise

SASKATOON, Sask.—Walter F. Thorn, M. J. K. Swanson and associates have renewed their application for approval of a natural gas franchise for Saskatoon. In addition to gas reserves in the Vera and Lloydminster area, arrangements are being made for purchase of gas from proven fields in East Central Alberta till additional reserves can be developed in Saskatchewan.

Pipe Line Activity

South Plains Line Outlet For Cochran-Hockley

FORT WORTH, Tex.—An outlet for the new pools of Cochran and Hockley counties in West Texas has been provided by completion of the 4-in. lines of South Plains Pipe Line Co. from the Motor Fuels Corp. refinery at Levelland in central Hockley County, southwest towards Cochran County, connecting wells in the Slaughter, Duggan and Dean pools.

The line will take 5,000 bbl. a day and will pay the posted West Texas price of 53 to 95 cents a barrel. Until now the production in the area has been trucked out.

Contract Let for Extension To the Cayuga Field

Stanolind Pipe Line Co. awarded Williams Brothers Corp. of Tulsa a contract for laying a 35-mile extension from Bullock station, near Mexia, East Central Texas, on its Mid-Continent-Texas City trunk line, to the Cayuga field.

The unit will transport crude purchased by the Pan American Refining Corp., affiliated with Standard of Indiana, to the refinery at Texas City. The line will have a capacity of 12,000 bbl. daily and will comprise 19 miles of 6-in. line and 16 miles of 8-in. line.

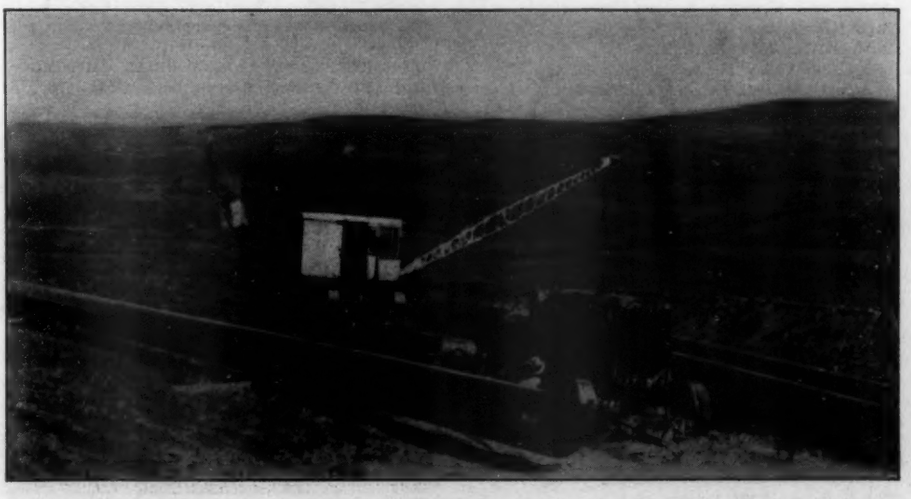
Pipe Shipped for Line of El Paso Natural Gas Co.

Sixty-two miles of 16-in. pipe is moving out of the Milwaukee pipe mill of A. O. Smith Corp. to be used in extension work of the El Paso Natural Gas Co. in New Mexico. The order consumed 6,833 tons of steel and required 207 railroad cars, each carrying .3 mile of pipe. Twenty-two miles are being shipped this month and the remainder will be shipped as needed.

Gulf Looping Goldsmith Line in West Texas

MIDLAND, Tex.—Gulf Refining Co., pipe line division, has started construction of a 10-mile, 6-in. welded loop on its 17-mile line from the Goldsmith field of Ector County to its Judkins station. Continued development of its large Goldsmith lease necessitated the enlargement, which will increase the line's capacity to 19,000 bbl. daily, or approximately 30 per cent.

IN OPEN COUNTRY



Large diameter transmission line through easy country, showing some of the necessary machinery used in construction

PROGRAMS AND MEETINGS

Regional Technical Meetings Of W.P.R.A.

The dates for the regional technical meetings of the Western Petroleum Refiners Association have been announced by L. D. Mann, chairman of the manufacturing committee, as follows: October 5, Allis Hotel, Wichita, Kans., and October 27, Washington-Youree Hotel, Shreveport, La. The authors and titles of the papers will be announced at a later date.

Canadian Institute of Mining Will Discuss Fields

CALGARY, Alta.—The twenty-first annual western meeting of the Canadian Institute of Mining and Metallurgy will be held in Calgary from August 30 to September 1. The program will give prominence to fuels, especially Alberta petroleum and natural gas; and will include on the second day a visit to the Turner Valley field, with a demonstration of drilling and production processes.

Associations Support Public Relations Plan

The National Association of Petroleum Retailers, trade association of retail gasoline dealers, has adopted a resolution of commendation and cooperation concerning the public relations program of the American Petroleum Institute. A similar resolution was adopted by the Retail Gasoline Dealers Association of Wisconsin.

The resolution urges that every retail association, association official and director and every petroleum retailer, immediately become active in assisting the Institute and the industry in promoting the program.

"The public relations program," the resolution reads, "will benefit not only the industry, but specifically the dealer. The industry for years has been sorely in need of such a program. The present program is gaining momentum but it cannot be successful without the aid and assistance of every branch of the industry."

Seven More States Pass Bills "Deferring" Registrations

Since January 1, 1939, seven states have adopted so-called "deferred registration" measures changing the registration date from the first of the year to a later time. Measures of this kind, designed to provide a more convenient time for motor vehicle owners to buy license tags and designed also to bring greater revenue to state highway departments without increasing taxes, were passed in Arkansas, Delaware, Pennsylvania, Rhode Island, Wisconsin, New Mexico, and Georgia.

Twenty-four states now have deferred registration laws, and 16 others allow motor vehicle operators a period of grace beyond the regular date for registering vehicles.

League City Association Appoints C. M. Langford

C. M. Langford of Austin, Tex., former director of production for the Texas Railroad Commission, has been appointed field engineer for the League City Operators' Association, an organization of production owners in the field in Galveston County, Texas. Main producers in the field are Phillips Petroleum, Salt Dome, Midwest Royalty, George Echols and Maco Stewart.

Mr. Langford explained the work will include a study of bottom-hole pressures, reservoir conditions and production methods. The new engineer is a graduate of the University of Texas. He was employed by the Railroad Commission 4 years and 7 months. He left the commission May 1.

N.P.A. Semiannual Meeting At Cleveland, April 18-19

The thirty-seventh semiannual meeting of the National Petroleum Association will be held April 18 and 19 at the Cleveland Hotel, Cleveland, Ohio.

MAGNETIC STORM

TUCSON, Ariz., July 15.—A moderate storm began July 13 at 10 p.m. and ended July 14 at 11 p.m., central standard time.

DRILLING TIME IN ROTARY PRACTICES

The second of two outstanding papers on the subject of "Drilling Time Data in Rotary Practices" appears on Page 40 of this issue. This article is by P. B. Nichols, of the Indian Territory Illuminating Oil Co. T. C. Hiestand of the same company was author of the first article which appeared in the July 13 issue, Page 55.

Both papers were presented at the twenty-fourth annual meeting of the American Association of Petroleum Geologists, held at Oklahoma City, March 22, 1939, and the papers are published with the permission of the A.A.P.G. Bulletin.

CALENDAR OF EVENTS

August

KANSAS GEOLOGICAL SOCIETY, thirteenth annual field conference, jointly with Illinois and Missouri state surveys and Illinois Geological Society, in southern Illinois and eastern Missouri—August 30-September 3.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, New York, September 4-8.

OIL WORKERS INTERNATIONAL UNION, Hammond, Ind., September 5.

NORTH AMERICAN GASOLINE TAX CONFERENCE, annual meeting, Niccolet Hotel, Minneapolis, Minn., September 11-13.

MONTANA NATIONAL BITUMINOUS CONFERENCE, Sun Valley, Idaho, September 11-14.

AMERICAN CHEMICAL SOCIETY, Boston, Mass., September 11-15.

NATIONAL PETROLEUM ASSOCIATION, thirty-seventh annual meeting, Hotel Traymore, Atlantic City, N. J., September 13-15.

October

NATIONAL LUBRICATING GREASE INSTITUTE, Stevens Hotel, Chicago, October 2-3.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Galveston, Tex., October 4-6.

TEXAS DIVISION, MID-CONTINENT OIL AND GAS ASSOCIATION, twentieth annual meeting, Houston, Tex., Oct. 5.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION meeting, Houston, Tex., October 5-7.

AMERICAN GAS ASSOCIATION, annual convention, New York, October 9-10.

NATIONAL TAX CONFERENCE, Palace Hotel, San Francisco, Calif, October 16.

SOCIETY OF AUTOMOTIVE ENGINEERS, annual dinner, Hotel Pennsylvania, New York, October 16.

FORTIETH ANNUAL NATIONAL AUTOMOBILE SHOW, Grand Central Palace, New York, October 16.

NATIONAL SAFETY CONGRESS AND EXPOSITION, Chalfonte Haddon Hall, Atlantic City, N. J., October 16-20.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, tenth annual meeting, Fort Worth, Tex., October 18-20.

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, Petroleum Division, Los Angeles, Calif., October 19-20.

WEST VIRGINIA PETROLEUM ASSOCIATION, Hotel Daniel Boone, Charleston, W. Va., October 25.

COLORADO PETROLEUM INDUSTRIES COMMITTEE, annual convention, Shirley-Savoy Hotel, Denver, Colo., October 27.

November

SOCIETY OF AUTOMOTIVE ENGINEERS, fuels and lubricants meeting, Mayo Hotel, Tulsa, November 2-3.

NATIONAL MOTOR TRUCK SHOW, Navy pier, Chicago, November 8-16.

AMERICAN PETROLEUM INSTITUTE, twentieth annual meeting, Stevens Hotel, Chicago, November 13-17.

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, Providence, R. I., November 15-17.

December

WEST CENTRAL TEXAS OIL AND GAS ASSOCIATION, Abilene, Tex., December.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Philadelphia, Pa., December 4-7.

February 1940

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS, New York, February 12-15.

April

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, twenty-fifth annual meeting, Stevens Hotel, Chicago, April 10-12.

AMERICAN PETROLEUM INSTITUE, EASTERN DISTRICT, Division of Production, Columbus, Ohio, April 11-12.

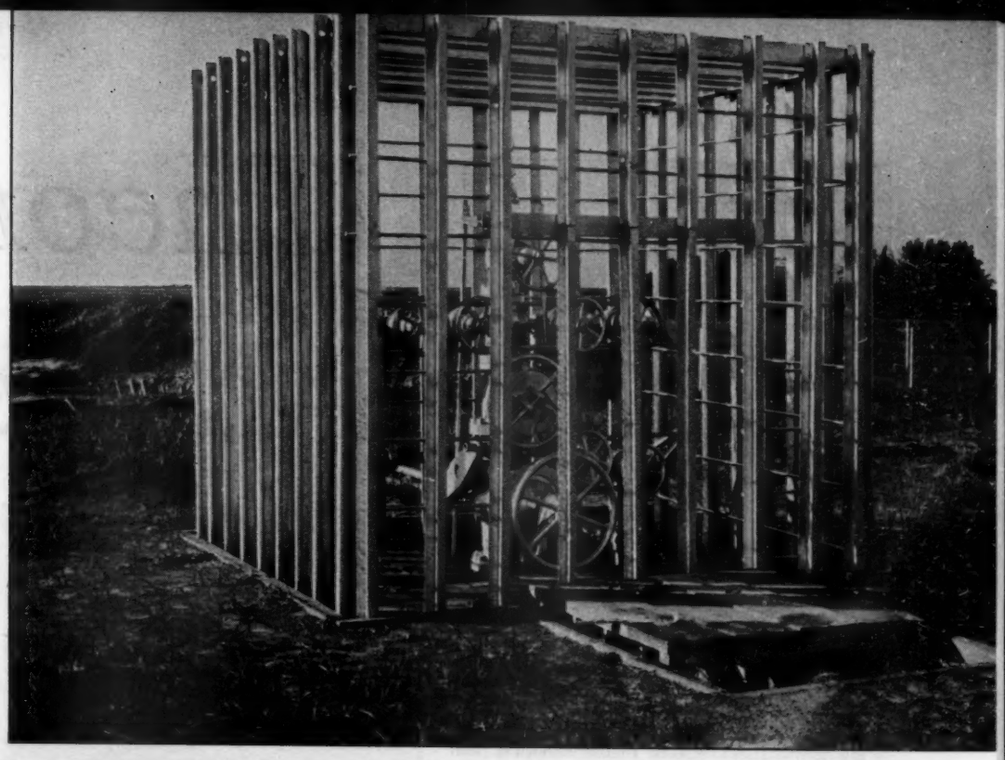
NATIONAL PETROLEUM ASSOCIATION, semiannual meeting, Cleveland Hotel, Cleveland, Ohio. April 18-19.

May

INTERNATIONAL PETROLEUM EXPOSITION, Tulsa, May 18-25.

June

THIRD WORLD PETROLEUM CONGRESS, Berlin, Germany, June 9-15.



Few would readily recognize this as an oil well. Yet this is an important one in a producing field located between Galveston and Seabreeze, Tex. Engineers designed this enclosure to protect the christmas tree against driftwood. The principal members of the structure are discarded steel rails. They are welded to each other and reinforced with old sucker rods

ENGINEERING & OPERATING

JULY 20, 1939

Theories and Modern Oil

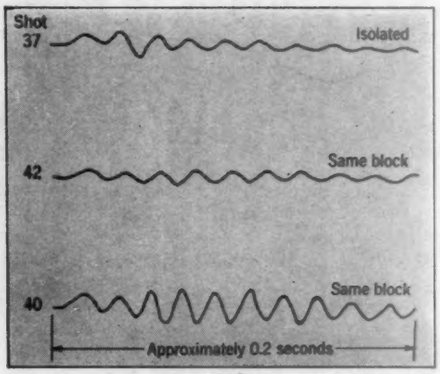


Fig. 1 (above)—Seismograph record of a vibration produced by a shot. Fig. 2 (right)—Representation of a compression wave

THE purpose of shooting oil wells is of course to increase the output of producers, or, in the case of input wells, to increase the rate of intake.

We know these effects follow shooting, and vary more or less with the amount of explosive. Just how this effect is produced is the subject of considerable speculation, and this article will attempt to bring together some of the latest work on the subject, including the writer's field observations and deductions.

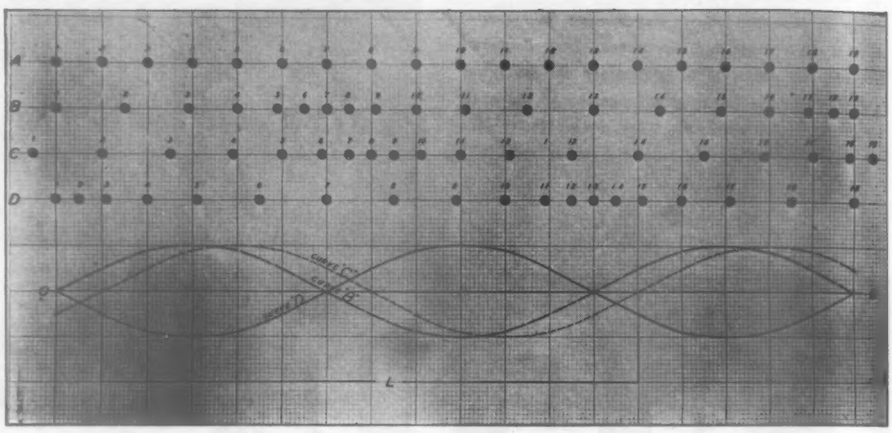
The early supposition that the creation of a cavity was the object and result of shooting, I believe, has been abandoned as an insufficient explanation of the results obtained.

The writer and others[1 2] have shown the approximate dimensions of shot holes by direct measurements. The creation of a cavity by an explosive in the so-called Trauzl[3] (lead) block has been used as argument in favor of different grades of explosive and methods of shooting. While this is probably a legitimate method of rating the power of explosives, the action in a medium such as lead cannot be compared to the action in a medium such as rock on account of the great difference in mechanical and elastic properties.

The release of dissolved gases[4] has also been advanced as the purpose or at least a result of shooting. By way of analogy, the comparison is made between what happens when a bottle of soda water which has been standing some time is opened carefully and when a bottle is opened which has been violently shaken. This undoubtedly does contribute to the rate of flow following a shot, even in fields of low reservoir pressure. However, none of the increased input rate into air, gas, or water intake wells can be attributed to this phenomenon.

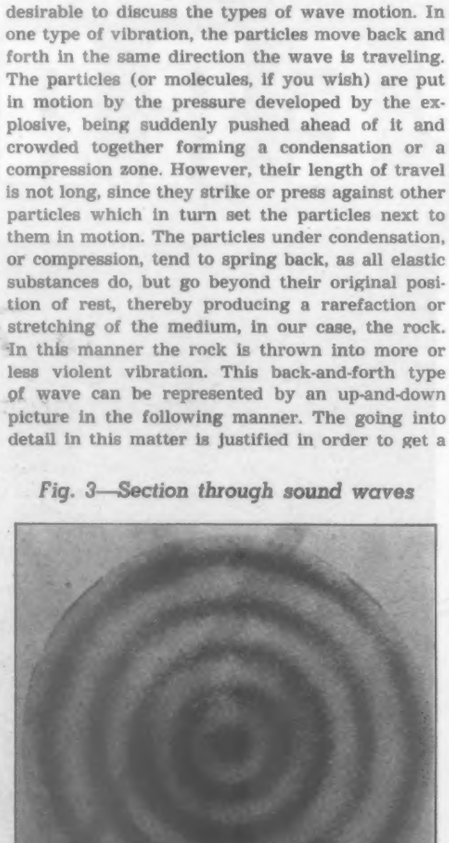
The third, and currently accepted, concept of the effect of shooting, and one which fits the theory as well as field observation, is that a vast system of cracks, crevices and planes is created which affords an easier path along which fluids may travel, and at the same time these planes, by exposing enormous numbers of rock pores, greatly increase the number of points by which the fluid may leave or enter the rock proper. The mechanics of the creation of this system of cracks, and a discussion of their nature, is the object of this effort.

It will readily be admitted that when a charge is exploded in a well the rock is set to vibrating. Advantage is taken of this fact in the seismographic method of exploring underground conditions, and a glance at a seismograph record such as Fig. 1 should suffice for proof if such is needed. It should be borne in mind, however, that this is a representation of the wave, and that the actual wave has an entirely different character from the up and down wavy character shown.



For a proper understanding of the character of the earth waves generated by a shot it may be desirable to discuss the types of wave motion. In one type of vibration, the particles move back and forth in the same direction the wave is traveling. The particles (or molecules, if you wish) are put in motion by the pressure developed by the explosive, being suddenly pushed ahead of it and crowded together forming a condensation or a compression zone. However, their length of travel is not long, since they strike or press against other particles which in turn set the particles next to them in motion. The particles under condensation, or compression, tend to spring back, as all elastic substances do, but go beyond their original position of rest, thereby producing a rarefaction or stretching of the medium, in our case, the rock. In this manner the rock is thrown into more or less violent vibration. This back-and-forth type of wave can be represented by an up-and-down picture in the following manner. The going into detail in this matter is justified in order to get a proper conception of the various factors in vibratory motion such as wave length, amplitude, and velocity.

Fig. 3—Section through sound waves



In Fig. 2 are four lines of dots, representing particles of rock, and three curves representing the progress of a compression wave. In line *A* the particles are shown in an undisturbed condition. In line *B* the condition is shown after this group of particles has been set to vibrating. It will be seen that at this particular instant No. 1 is in its original position, No. 2 has been displaced one-half space to the *right*, No. 3 about nine-tenths space, No. 4 a whole space, No. 5 about nine-tenths space, No. 6 one-half space, and No. 7 is unmoved. Beyond No. 7, No. 8 has been moved one-half space to the *left*, No. 9 about nine-tenths space, No. 10 a whole space, No. 11 nine-tenths space, No. 12 one-half space, with No. 13 in its original position. Nos. 14, 15, 16, 17, 18, and 19 repeat the displacement of Nos. 2, 3, 4, 5, 6, and 7. It is evident that Nos. 7 and 19 are centers of compression, and Nos. 1 and 13 centers of stretch or rarefaction.

Consider that the waves start on the left-hand side, then line *C* shows conditions an instant later than in line *B*, with particles 8 and 20 (not shown) as centers of compression, and Nos. 2 and 14 are now centers of stretch or rarefaction. In line *D* the wave has progressed until conditions are reversed, and Nos. 1 and 13 are centers of compression, and Nos. 7 and 19 are centers of stretch.

These conditions are represented graphically in the graphs, curve *B* representing the condition shown in line *B*; curve *C*, line *C*; and curve *D*, line *D*. They are constructed by plotting at the position of each particle the extent it has been removed. Displacements to the right are represented by upward lines, and displacements to the left by lines measured downward from the zero axis. The zero axis, of course, represents conditions in line *A* where there is no displacement.

This enables us to define the terms used to describe wave motion. The amplitude is the greatest distance through which a particle is displaced from its position of rest. In the case shown, the

Practices in Well Shooting

By R. B. BOSSLER
Brundred Oil Corp.

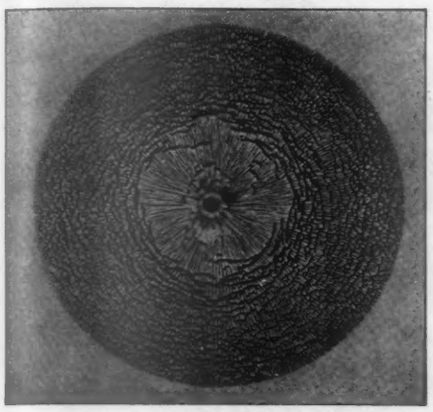


Fig. 4 (above)—Photograph of cracks forming in glass struck with a plunger at the control point. Fig. 5 (right)—Chunk recovered from a shot well, showing sheared pebbles

amplitude is one unit, since that is the greatest distance any of the particles was displaced. The wave length is 12 units in this case. In that length, on any of the lines or curves, any particle is in the same position with respect to its neighbors, and is moving in the same direction.

To understand the velocity of wave travel, it is only necessary to understand that here we have represented the wave as traveling to the right. In a short unit of time the crest of the curve *B*, as at No. 4 has moved to No. 5, and at the end of a longer unit of time the crest has moved to No. 10. Velocities are usually measured in feet per second, and in solids reach speeds of three or more miles per second.

A picture of this type of sound wave[6] is represented in Fig. 3, the dark rings being assumed to represent compression or condensation, and the light rings rarefaction or stretch.

The description as given above applies to a continuing wave as from a tuning fork or violin. In the case of waves set up by an explosive, the back-and-forth motion of the particles is short-lived, and falls off rapidly with time. This can be seen from the behavior of the lines in Fig. 1. However, an important point is contained in the fact that the particles do continue to oscillate after the passage of the initial compression.

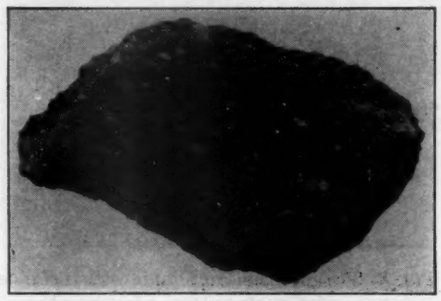
There is another type of wave generated by the explosion, in which the motion of the particles is at right angles to the direction of the wave. This produces a result at any surface such as a bedding plane, or the surface of the ground, which would be represented by the curves of Fig. 2. To do this let the curve represent the actual direction and amount of displacement, the direction of the wave, of course, being along the line *O-O*.

It will be realized also that this type is similar to the first in that motion given to one particle is passed on to the next, and from it to the next, and so on. In the meantime, due to its elasticity, the first has sprung back toward and past its original position.

To further complicate this picture, the second type of wave vibrates not only up and down but sidewise as well. The path traveled by a rock particle when subjected to these waves must be somewhat in the shape of a circle or elipse and it probably becomes much more complicated when affected by other factors such as length of charge, reflections, etc.

Practical Application

With these things in mind we can now consider a shot in a well. The wave motion shown in Fig. 3 represents a cross section through a sphere of



sound produced at a central point. Let us take for our case a long-drawn-out charge in a well. In this case the waves will be predominantly cylindrical, or slightly conical, since the top of the shot will go off first, and its wave will move outward a short distance before the bottom of the shot explodes. Just what this "lead" amounts to can be determined from the velocities of detonation of the various explosives and the velocity of wave travel in the medium. Following is a table showing the velocity of detonation of some explosives and the velocity of wav travel in various substances.

TABLE 1—RELATIVE VELOCITIES OF DETONATION

Explosive—	Ingredient weight-strength (per cent)	Velocity, ft./sec. Open	Confined
Ammonia-dynamite	65.5	8,482	11,571
Ammonia-dynamite, low velocity	65.5	6,658	7,872
Ammonia-gelatin	24.5	8,282	10,466
Ammonia-gelatin	51.2	16,597	20,106
Nitroglycerin-dynamite	40.0	16,495	17,482
Nitroglycerin-dynamite	60.0	17,299	19,171
Liquid nitroglycerine*	100.0	.....	18,200

*Lewis, Paul F., "Oil Field Explosives, Their Character and Use," A.P.I. Production Practice, 1934, p. 75.

TABLE 2—VELOCITY OF WAVE TRAVEL IN VARIOUS SUBSTANCES

(Smithsonian Tables as quoted by Handbock of Chemistry and Physics)

Substance—	Velocity, ft./sec.
Air	1,087
Aluminum	16,740
Copper	11,670
Iron and soft steel	16,410
Lead	4,026
Clay rock	11,420
Granite	12,960
Marble	12,500
Slate	14,800
Glass from	16,410
Glass to	19,690
Water	4,714

Taking a shot 40 ft. long, and an explosive having a detonation rate of 18,000 ft. per second, and a speed in rock of 11,550 ft. per second, we find that the bottom of the shot explodes .0022 second after the top. In this time the wave from the top has moved outward .0022 × 11,550 ft., or about 25.5 ft. While this is an angle of about 40° the "lead" amounts to only about one-eighth of a wave length. Explosives having different rates will give different slopes, and the slope will be affected somewhat by the nature of the rock. However, it is believed that shattering due to this time lag is not of major importance, since there is only a small phase difference between even the extreme ends of the shot.

The chief factor in the shattering effect produced by an explosive is the shearing produced when two adjacent parts of the rock are vibrating out of phase. Referring to Fig. 2, this action can be seen either in the curves or the lines of dots. In the curve *B* the upper loops are directly under particles 4 and 16 representing the fact that these particles have moved their extreme travel to the right. In curve *D*, the *lower* loops are under these particles, which means that these particles have gone their limit to the left. If now one section of the rock is vibrating according to curve *B* and the adjacent section according to curve *D*, then there is present a shearing

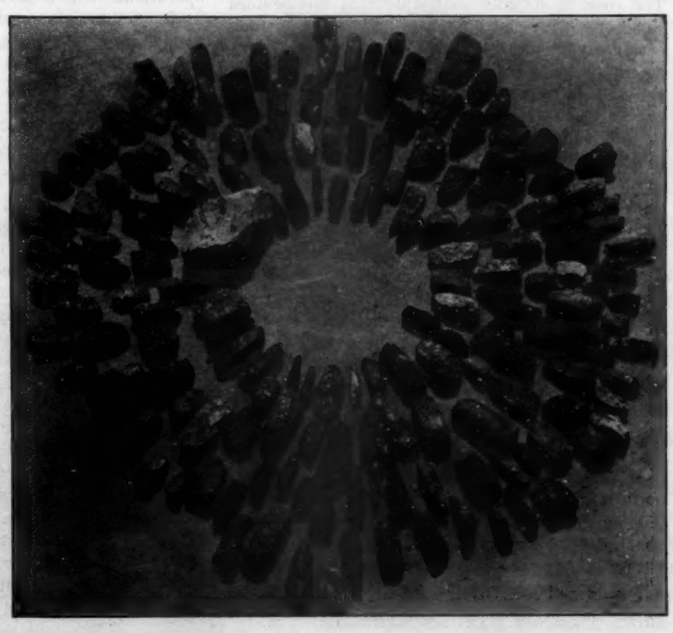


Fig. 6—A hypothetical arrangement of chunks recovered from a shot well, arranged to illustrate a possible set of shot cracks

force which can be shown to be sufficiently strong to produce the cracks, crevices and planes at considerable distances from the hole.

While the reason for waves becoming sufficiently out of phase to produce shear is not clear a part of the explanation must lie in the fact that they start outward in a circular path about the hole, are reflected from distant parts, and return converging upon the hole in some manner so as to be out of step with the oscillation still remaining in the particles near the hole. Another reason for the production of shear may be explained as similar to the manner in which the rim of a bell or a steel ring vibrates. It may be shown that when either is properly supported and struck lightly, it vibrates by quarters, one quarter moving inward while the next quarter moves outward, and so around the circle. There will also be produced four stationary points or nodes, on one side of which the particles are moving outward, and on the other side the particles are moving inward, thus producing a shearing force at the nodes. By striking in a different manner, and holding certain points stationary the metal ring can be made to vibrate in many parts, thereby producing many nodes, or points in shear.

Evidence that this shearing action is the major factor in the results produced by shooting is of two sorts. The first is deduced from the behavior of cracks as observed in the laboratory; the other is the evidence of chunks recovered from shot wells. Fig. 4 is a photograph[7] of the cracks developed in a piece of glass when struck by a metal plunger. The work was done by Prof. Harold E. Edgerton and Frederick E. Barstow of the Massachusetts Institute of Technology in measuring the rate of cracking in glass. While the photograph shows the glass to be broken into wedge-shaped pieces strikingly similar to chunks recovered from wells and to be discussed shortly, the chief significance lies in the rate at which the cracks developed. While the rate of wave travel in the glass was something over 15,000 ft. per second, the rate of crack developed was but 5,000, showing that a certain condition of vibratory motion must first be produced before the cracking occurs. This rate of crack development was also arrived at by Prof. H. Schardin, using bullets to produce the cracks.

The shearing action is also evidenced in many chunks recovered from a shot well, a photograph of which is shown in Fig. 5. The oil sand in this case was a coarse conglomerate, and it will be seen that many of the pebbles are sheared across. The rock is actually so friable that the pebbles can be easily pried out with a knife blade, indicating a very low strength in tension, yet a force acted on them in such a manner to shear practically all the pebbles cut by the plane which forms the surface. The only conceivable force capable of producing this result is a shearing force, and the only satisfactory explanation of such a shearing force is the one given. It is interesting to note that in the majority of cases the sheared planes are perpendicular to the bedding of the rock, indicating that the shear planes are predominantly vertical.

This last fact sheds considerable light on the nature of the crack system developed. More light can be gained by examining the cracks in any rock-cut or a tunnel where blasing was done. In those shots where the charge was long, many planes can be seen extending away from the drill hole and parallel with it. In accordance with the idea that the shear planes are mostly vertical, the writer arranged about a bushel of chunks radially about an imaginary hole, as shown in Fig. 6. Particular attention is called to the fact that many of the chunks are wedge-shaped, indicating planes radiating outward. Attention is also called to the large chunk which bears a section of the actual well bore and is bounded by two vertical planes radiating outward from the center of the hole. Not visible in the photograph are the bedding planes, in practically all cases perpendicular to the shear planes, and also only occasionally visible but abundantly present are many sheared pebbles on the assumed vertical surfaces of the chunks.

The question may be asked how cracks can be produced in a solid rock, and kept open enough to do any good. The answer lies in the fact that rocks are more or less compressible, and some sandstones have been compressed to 99 per cent of their volume without crushing. That means that at 5 ft. from the hole there could be developed a total crack width of nearly 4 in., if the force of the shot were sufficient. There can be no doubt that with the shearing there must be some displacement, and considerable fragments produced which could tend to keep the cracks open to some extent.

Of particular importance is the distance to which these cracks, crevices and planes extend

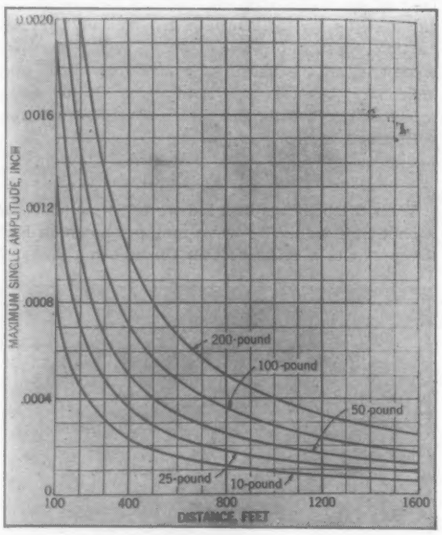


Fig. 7—Variations of amplitude with distance for several weights of explosive charge. Explosive weight strength 65 per cent

outward from the well, especially in repressuring operations, where undoubtedly some oil is lost in the solid sections of rock between cracks. At Pechelbronn in France, where an oil sand is being mined, shot cracks have been observed as far as 40 ft. from the well. (C. B. McClintock, consulting geologist, Oil City, Pa., personnel communication.)

Considerable work has been done on this phase of shooting by Dr. S. T. Yuster.[8] From the equations for permeability, and the behavior of shot and unshot wells when used as intake wells in water flooding, he arrives at the conclusion that some wells in Bradford behave as though they were open cylinders in the sand 44 ft. across. Actually, after shooting, they may be only 2 or 3 ft. across; but the shooting has exposed enough pore openings so that water enters the sand as freely as though the cavity were 44 ft. across.

Of equal interest may be some data recently published[9] which, coupled with the theory of wave travel, enables us to make some calculations in this regard. Fig. 7 is taken from this publication[9] and shows the maximum amplitude of the wave produced in a limestone at varying distances from the shot, by shots of different weights. While these curves were drawn to show the amplitude at distances greater than 100 feet from the shot, I have extended backward the curves for different weights of explosive of 65 per cent weight strength.

The following table shows these computed values:

TABLE 3—COMPUTED MAXIMUM SINGLE AMPLITUDE PRODUCED BY DIFFERENT WEIGHTS OF EXPLOSIVE OF 65 PER CENT STRENGTH AT VARIOUS DISTANCES FROM THE EXPLOSION

Weight of explosive (lb.)	Maximum single amplitude produced (in.)		
	Distance (ft.)		
	100	10	1
50	.00199	.0199	.199
100	.00282	.0282	.282
200	.00399	.0399	.399

Roughly, 100 per cent increase in explosive causes 50 per cent increase in amplitude at equal distances.

The object of this calculation was to find the amplitude at various distances, in order to arrive at another factor, namely the shearing stress at various distances. This is done by combining the equations for intensity of sound as follows:

In terms of displacement amplitude, intensity

$$I = \tfrac{1}{2}\, d_o V\, (2\pi f)^2\, D^2_{max.}$$ and in terms of *pressure*

$$I = \tfrac{1}{2}\, \frac{P^2_{max.}}{d_o V}$$

In these equations:

I = intensity
f = frequency
d_o = average density
V = velocity
π = usual meaning
$D_{max.}$ = maximum displacement
$P_{max.}$ = excess pressure at points of compression

Equating the two right-hand halves of the equations, and reducing we have:

$$d_o V\, (2\pi f)\, D_{max.} = P_{max.}$$

All factors on the left are known or can be measured, hence we can solve for P. Let the density have a value of 170 lb. per cu. ft., velocity equal 11,500 ft. per second, frequency or number of waves per second equal 50, and the amplitudes be as arrived at as above.

A simple calculation shows that pressures of the following order are developed:

Charge of explosive / Distance from the shot (ft.)	50 lb.	100 lb.	200 lb.
	P in lb. per sq. in.		
100	8,000	12,000	16,000
10	80,000	120,000	160,000
1	800,000	1,200,000	1,600,000

Pressures such as indicated at a distance of 1 ft. probably never develop, because the rock fails and the pressure is passed on to the parts farther away. However, it must be remembered that a pound of liquid nitroglycerin develops over 2 million foot pounds of kinetic energy, and pressures of over 150,000 lb. per sq. in.[10]

While these values of excess pressure are much greater than the shear strength of rock as measured in the laboratory, it must be remembered that the conditions of freedom and support underground are vastly different also. Also, there is undoubtedly some shearing produced at distances of 10 ft. or more, as would be indicated by the values.

A simple check of both pressure and amplitude values can be had through the modulus of elasticity, or Young's Modulus.

The modulus of elasticity, $Y = \dfrac{\text{stress}}{\text{strain}} = \dfrac{P}{D_{max.}}$

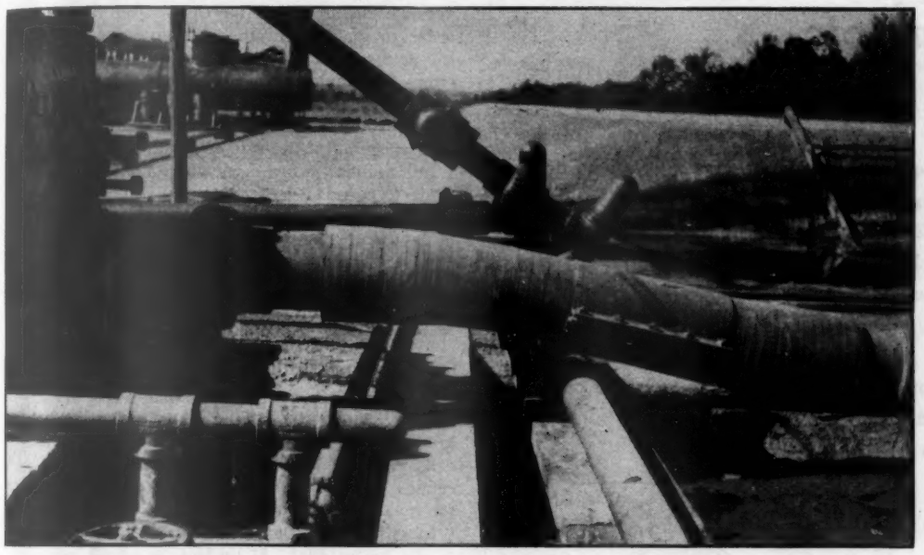
The value of Y for the rock where the work referred to above was done varies from 3 to 10.4 million lb. per sq. in.

By assuming a value of Y equal to 4 million, and substituting the values of P as shown above, we arrive at values of $D_{max.}$

(Continued on Page 43)

Reinforcement for Mud Pump Section Hose

Many of the breaks in mud-pump suction hose are found to occur within a few inches of the center of the unsupported section of the hose, with comparatively few of the failures blamable on anything but severe vibration and resultant fiber stresses which ultimately break down the structure. One drilling contractor reinforces each new suction hose before placing it in service. The center section reinforcement consists of a lightweight pipe clamp, set in place with its usual complement of bolts, a flap of ordinary ⅛-in. rubber sheet packing being used between clamp and outside ply of hose fabric. A suction hose thus stiffened in the center section divides the flexing and pulsation waves over two similar portions and pulsation waves are largely damped out instead of being allowed to build up.



Portable Bunk House

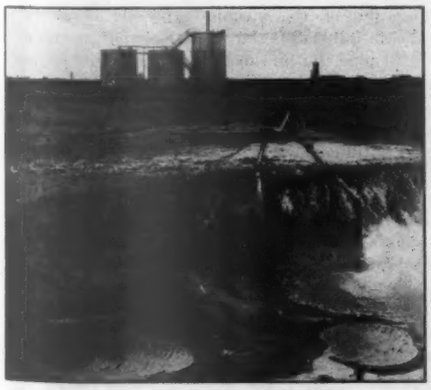
A major company uses a portable bunk house which is installed near drilling wells. This provides accommodations for the entire drilling crew as well as for the engineer who is at the well when it is nearing completion.

Knockoff Device

Since multiple well pumping has become so popular in East Texas, a means to knock off the beam well has become necessary. Each well is required to produce its allowable of 20 bbl. per day. On a three-well hookup, as shown, sometimes the beam well will produce its allowable before the wells on

the "back crank" and it is necessary to knock it off and pump the jack wells. The beam-well knockoff shown was designed for this purpose. The well is knocked off by placing the "suitcase" between the polish-rod clamp and stuffing box on the polish rod and swiveling the hand loop towards the operator. The well is knocked on by swiveling the hand loop away from the operator into the hook which is attached to the beam as it reciprocates. The beam well is knocked on and off while in motion in a way that is similar to that used for back-crank wells which have knockoff posts installed in their rod lines so that they can be connected or disconnected from the back crank.

Operating Ideas



Evaporation of Salt Water

A number of Gulf Coast operators burn gas flares in a pit to evaporate salt water produced with the oil. The accompanying photograph shows one method of doing this. A gas line with a turned-down nipple on the end directs the ignited gas to the point where salt water from the tank battery drains into the pit. The flame should not come into contact with water as cooling must be avoided.

Cover for Post

A serviceable and readily detachable cover for the end bearing of a rod line is made by welding a section of tank plate over the end of a casing protector just large enough to fit over the top of the pipe used as end support for the rod lines radiating from a power. By drilling these covers on each side, and boring corresponding holes in the top of the pipe upright, the cover can be bolted on with a ½-in. bolt; it is easily removed for lubricating or servicing the bearing block.

Drilling Time Data in Rotary Practice

Part 2

By P. B. NICHOLS
Geological Engineer, Indian Territory Illuminating Oil Co.

Recording drilling time manually has been used quite successfully but the method allows the human element to enter largely into the accuracy of the data. The information has been restricted chiefly to the depths where production is expected, and of course has not been kept for the majority of rotary operations.

The geolograph is an instrument which automatically records the rate of penetration, foot by foot, along with such related information as time out for repairs, round trips, etc. A diagram of the hookup illustrates the manner in which the motion of the tools is recorded. A chart form depicts the typical drilling changes in rates of penetration together with the information as to when the tools are on bottom, when drill-pipe connections are made, samples circulated, etc.

The use of drilling time as a basis for the determination of a stratigraphic change is probably as old as the first rotary driller's log. Certain contrasting contacts such as shale with friable sand or dense lime with porous lime are perfectly obvious to anyone on the rig floor. Nevertheless the rotary driller's log has always been of little or no value to the geologist and this may be one of the reasons why the importance of drilling time has so long been overlooked. The driller's responsibility is to make hole, to protect the hole already drilled and to keep up his equipment. When he sits down at the end of the tour to make out his report it is not surprising that the details are lost in 100 ft. of "shale with streaks of sand and lime."

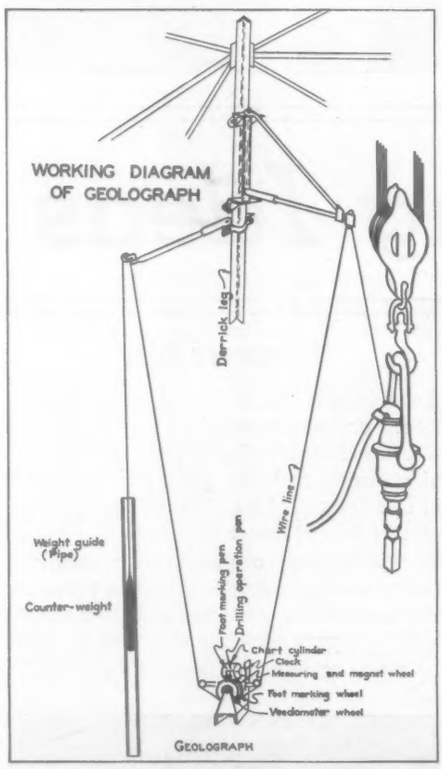
One of the first constructive efforts to utilize drilling time in correlation was that made in 1937 by Maddox[3] on two wells in the Moore pool, Cleveland County, Oklahoma. A number of articles have appeared on the subject and the value of a detailed drilling time record has been proven from the Gulf to Kansas and from California to Illinois.

The usual method of obtaining the drilling time is to stripe the "kelly" with tool-joint lubricant at equispaced intervals of from 1 to 5 ft. or even 10 ft., depending upon the accuracy desired. As each successive mark reaches the rotary table the time and depth and elapsed time for drilling that interval are recorded. This information may be recorded by the geologist or engineer in charge of the operation but more often it is kept by one of the floormen under the direction of the driller.

The human element enters largely into the accuracy of this method. Rates of penetration as high as a foot a minute have been recorded at depths where shallow production might be expected. The contractor makes the most money per foot at the top of the hole and it is expecting too much of the floorman to make an accurate foot-by-foot drilling time record when the driller is "pipe lining," or "stomping it down" through the upper formations.

The geologist also has his troubles when drilling is rapid. The lag or amount of time it takes a sample to reach the surface from bottom is a variable factor which increases with depth. In order to make accurate determinations at critical points it is customary to stop drilling and circulate samples from bottom, or core the top of objective horizons when changes in the character of the formation being drilled are indicated by a variation in the rate of penetration.

In a number of instances where no attempt was made to correct the log by circulating or coring, the sample log shows a lag of from 10 to 12 ft. at depths of 3,400 to 4,000 ft. as compared to the drilling time log. In one particular instance a perforation at the top of the sand by uncorrected sample log would actually have been in shale 1 ft. below the base of the sand by the time log.



Working diagram of geolograph, not drawn to scale. Gooseneck to rotary swivel is shown at the right-hand side, with wire line attached. Brackets fastened to derrick leg are shown at top. Geolograph is illustrated at bottom, with wire line passing through the instrument to turn sheave. Counterweight, encased, is designated at the left-hand side. Various essential parts of the geolograph are labeled, such as chart cylinder and recording pens, clock, and three wheels

Recording Drilling Time Mechanically

A recent innovation in the manner of obtaining the drilling time is the use of an instrument known as the Geolograph. This device automatically records the rate of penetration with such related information as time out for circulating, for repairs, round trips, etc. (See Fig. 3.)

In operation a flexible wire line is made fast to the "goose neck" of the rotary swivel, passed through a sheave about 50 ft. above the derrick floor, thence down through the geolograph and back over a second pulley in the derrick. A weight is fastened to this end of the line which moves freely in a guide composed of two joints of tubing fastened to the side of the derrick. In this manner the wire line actuated by the movement of the drill pipe and kept taut at all times by the weight, transmits the amount and direction of motion as it feeds through the machine in the various drilling operations.

Operation of the machine may be described briefly as follows: At any vertical movement of the drill pipe the line feeds into the device, passing around a wheel fitted with cams which contact a recording pen at 1-ft. intervals. As the chart is rotated by the clock this pen is recording a continuous vertical line until contact with a cam throws it out of line, making a short horizontal line. The distance between any two of these lines represents the elapsed time required for drilling that foot of formation. Fig. 2 shows some typical drilling time breaks as recorded by this instrument.

Directly above and in sliding contact with the edge of the wheel described, is suspended in pendulum fashion a common magnet. Free to swing in an arc, this magnet is responsive to the direction of motion of the wheel. An upper extension of this magnet carries a second pen which records these movements in the drilling operations column of the chart (Fig. 2).

When drilling is in progress, the direction of rotation being always the same, the pen records at the left of the column, but as soon as the bit is raised from bottom the reversal of direction causes the pen to move to the right, registering in that position until downward movement of the bit carries it back to the normal drilling position. In this manner the time required for "round trips," "circulating for samples," "repairs," etc., in this relation to each other and to the amount

and depth of hole drilled is impartially recorded.

The margin at the right of the chart is used for explanatory notes. A few abbreviations in this column relative to the operation taking place or cause of the down time provides a very valuable record for future reference both to the operator and the contractor.

Another feature of the machine is the inclusion of a counter which is geared to the shaft of the measuring wheel and from which the total depth may be read directly at all times.

This is proving helpful in eliminating depth corrections. Failure to record a joint of pipe in the tally as well as mathematical errors are revealed by a discrepancy between the pipe book and the counter in the geolograph.

A clutch is provided by means of which the measuring wheel may be thrown out of driving relation with the cams which actuate the pen recording the drilling speed. This may be used when an operation such as reaming is in progress, which, if recorded, might be misinterpreted as rapid drilling. Use of the clutch does not affect the drilling operations record.

The geolograph is generally installed in the geologist's sample shack placed a short distance from the derrick, although it has also been used in the corner of the derrick adjacent to the driller. Usual procedure is to rig up the machine while waiting, after cementing the surface pipe. The machine does not interfere in the drilling operation and it need not be disconnected until drilling has been completed.

The geolograph was conceived by the writer and developed in cooperation with the engineering department of the Indian Territory Illuminating Oil Co. It was first used in the Oklahoma City field in December, 1937. Success of this device has led to its adoption as standard equipment on all of this company's drilling operations. Only six machines have been constructed to date and their use has been confined to the Mid-Continent area. However, it is reasonable to assume that it will prove to be of value wherever drilling time has been used successfully.

Accuracy of the geolograph in indicating points of stratigraphic change has been checked by coring and electrical logging. The foot-by-foot record obtained while coring is a valuable index to the porosity and permeability of the section cored and in case of failure to recover a part or all of the core the geolograph record aids greatly in interpreting the character of the missing portion.

The geolograph was designed to overcome the existing problem of lag in rotary samples and it accomplishes this purpose. It is not claimed to be a cure-all and the record it makes is liable to gross misinterpretation if studied apart from the well samples and general stratigraphy and geology of the area involved.

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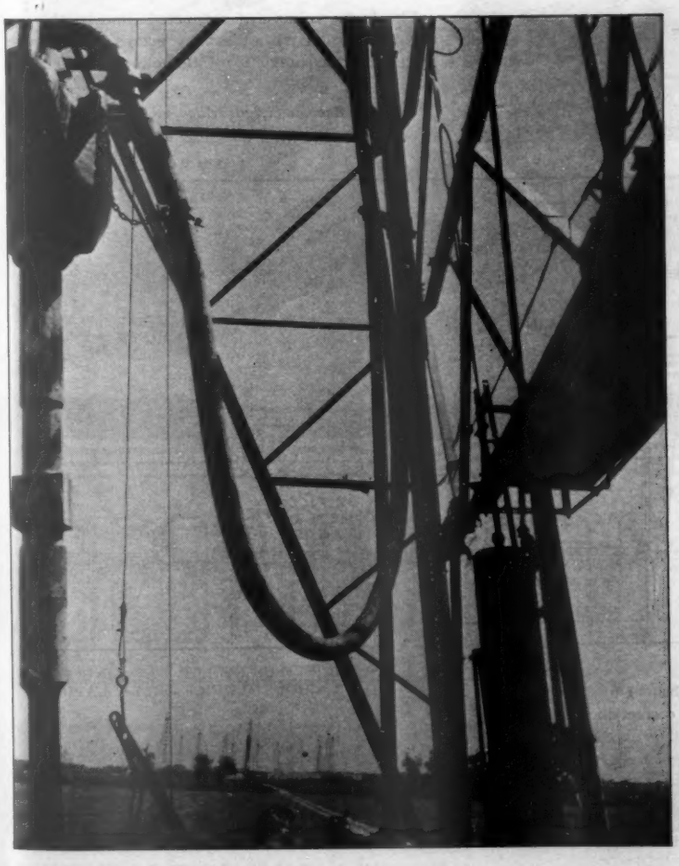
SAFETY — Mud Box Prevents Derrick Accidents



Some operating features are time economizers and at the same time decrease the danger of accidents which might result in damage to the equipment or injury to a workman, Installations of some equipment is primarily for the safety of the workmen.

The 24-in. platform attached to the first girt at the right of the photograph is of the latter classification. It provides easy access to the main ladder from the short ladder seen near the far side of the derrick; it also prevents a man from going off the end of the ladder while descending.

The mud box at the right of the photograph comes under the former classification. It is used in areas where floats are not run in the drilling string because of the danger of blowouts and the drill pipe must be pulled "wet" (full of mud). This means that each stand of pipe broken off will have from 1 to 20 ft. of mud in it which will flow out on the floor unless restrained.

Generally this mud contains artificial additives which increase its viscosity and at the same time make it very slick. The workmen are in constant danger of falling if the mud is allowed to run loose over the derrick floor; wading around in ankle-deep mud does not add to the worker's mental composure and causes undue fatigue. Loss of mud by not confining it to the hole or the cellar is also expensive, as it is must be replaced.

The mud box is extremely helpful, as it can be placed around the drill pipe and the mud in the stand can be directed into the hole or cellar. It is made from a section of 9-in. pipe by splitting it in half, placing hinges on one split and an automatic latch on the other; belting can be used for packing at both splits and at the top, while the bottom can be equipped with a skirt made of canvas or burlap sacking.

The procedure is for the driller to break the joint with the tongs, slack off so there is no strain on the spring hook and then unscrew the stand from the string; the roughnecks then place the mud box around the stand of drill pipe and the driller lifts the stand and allows the mud to run from it. The mud box is then unlatched and the stand set back in the usual manner. Some drillers prefer to hold a strain on the stand with the spring hook, apply the mud box, and then spin out the stand; this is only slightly quicker, and it generally results in the scattering of considerable mud.

It save times, as the drilling crew has little desire for a mud bath, and in case no mud box is available, they generally run into the engine shed or the dog house, while the driller operates the controls from behind the drawworks. This means the operation is delayed until the men can again assume their positions. It also prevents wrecks on the rig, as a man's falling may allow a severe accident to occur.

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WELL SHOOTING

(Continued from Page 36)

Making this calculation we have:

P lb. per sq. in.	$D_{max.}$ computed from curves	$D_{max.}$ computed from Young's Modulus
8,000	.00199	.002
12,000	.00282	.003
16,000	.00399	.004

Obviously the value of 4,000,000 lb. per sq. in. for Y cannot be far wrong, as the rock was described as "medium hardness and low toughness."

To sum up these observations, it is concluded first that the major effect produced by a shot is the creation of a set of planes and crevices of wide extent, much wider than is commonly supposed; second, that the cracks and crevices developed by an elongated shot in a vertical hole are radial planes predominantly vertical; third, that the results of the shot are produced by wave motions rather than by the expansive effect of the force generated by the explosive itself; and fourth, that the extent of the cracking can be calculated from the elastic characteristics of the rock and the kind and quantity of explosive used.

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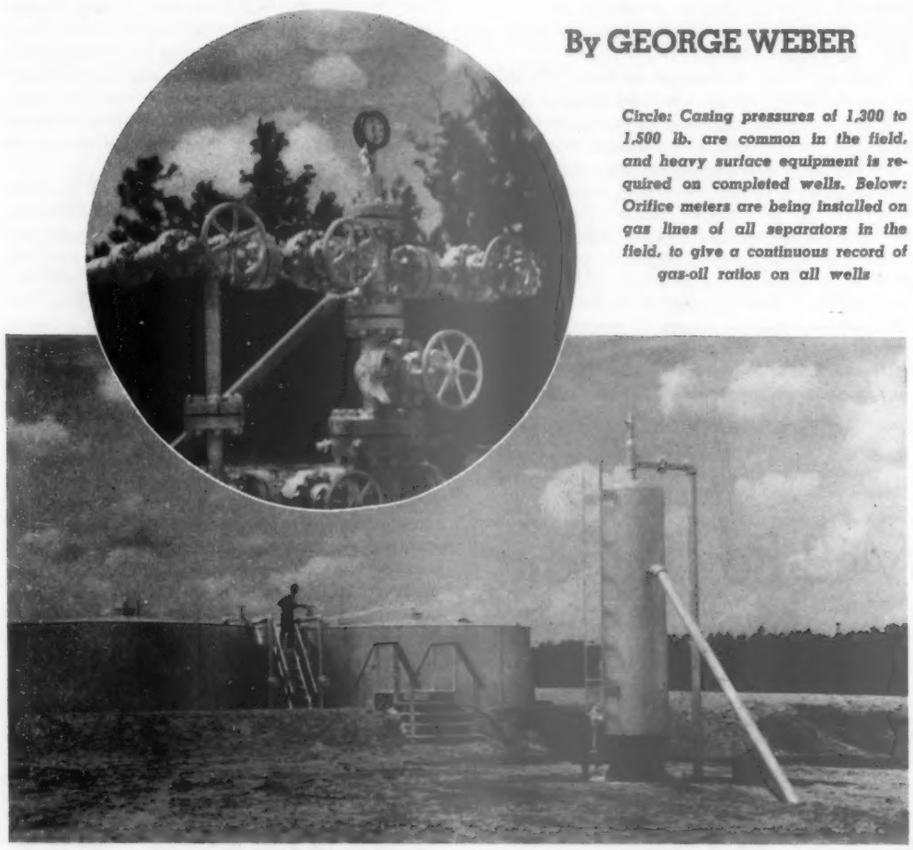
Production and Development Controlled at Magnolia

By GEORGE WEBER



Circle: Casing pressures of 1,300 to 1,500 lb. are common in the field, and heavy surface equipment is required on completed wells. Below: Orifice meters are being installed on gas lines of all separators in the field, to give a continuous record of gas-oil ratios on all wells

Proper production control is being given considerable attention in the Magnolia field of Columbia County, Arkansas. As one of the greatest crude reserves yet discovered in the state, the field will offer large returns for conservation practices in drilling and producing wells.

The most recent move in maintaining accurate check on field data is the installation of orifice meters on gas vent lines of all oil and gas separators in the field. Effective June 1, the metering order issued by the Arkansas Oil and Gas Commission provides for a continuous record of operative lease gas-oil ratios. The presence of a large gas cap in the porous lime reservoir makes the check of gas-oil ratios important, to correct production practices and to rework wells where necessary.

The meters which are being installed by operators consist of 7-day, 100-in. recording type, equipped with 100-lb. springs. The recommended installation suggests an elevated separator with a 4-in. gas line to the flare; the orifice plate to be placed at least 10 ft. from angle turns in either the upstream or downstream sides. A field system valve and a relief control valve may be placed downstream below the 10-ft. straight section, ahead of the riser. The weekly charts are used by the district engineer in computing daily gas production and ratios for each well.

The outlook for a very high recovery in Magnolia is favorable. The structure in the Smackover lime consists of an anticline, elongated in an as yet undetermined east-west direction. The porous lime at the top of the structure includes a gas cap of 110-ft. thickness. This section extends over most of the acreage that has been developed to date. Between the gas-oil contact and the water level, an interval of 188 ft. of oil-saturated lime exists in the main body of the field.

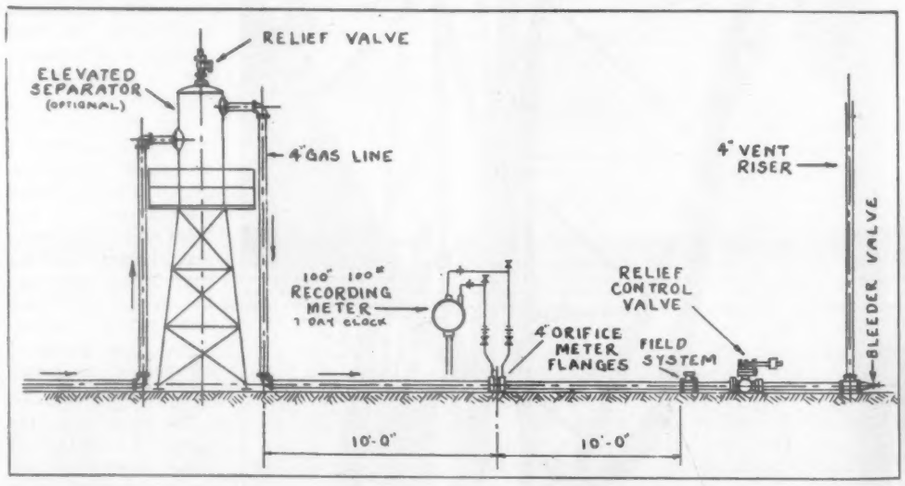
Porosity of the lime averages 18 to 20 per cent, and a permeability of 3,000 is usual, although some sections show as much as 6,000 millidarcys. On the conservative reserve estimate of 300 bbl. of recoverable oil per acre-foot, the 40-acre units in the center of the field may be expected to yield a total of about 2¼ million barrels of oil per well. This is probable, in view of a very effective water drive.

Dense Streaks in Lime

Further drilling will add to the information on the character of the porous lime. It is shown as fairly uniform, although an east side well, which was drilled through the oil section to the water table, encountered some dense streaks in the lime. The west section of the pool has not yet shown these streaks. The gas-oil contact has been established at —7,134 ft., and the water level is checked in two wells carried to that depth, at —7,320 ft.

The large volume of saturated lime in the reservoir, coupled with the very active water drive, which is characteristic of Smackover lime fields

Below: Recommended orifice meter installation for Magnolia field, Columbia County, Arkansas



SYMBOLS:

CF^1 = Coefficient (see below)
SpG = Specific gravity correction.
h = Differential reading on chart.
p = Pressure reading on chart.

FORMULA:

$CF^1 \times SpG \times \sqrt{h \times (14.65 + p)}$ = hrly. gas vol. in cu. ft.

COEFFICIENT FOR 4-IN. LINE FOR VARIOUS ORIFICE INSTALLATIONS

Orifice sizes in in.	
.50	66.5
.75	149.8
1.00	265.9
1.25	415.4
1.50	598.2
1.75	815.3
2.00	1,080.1
2.25	1,407.6
2.50	1,814.3
2.75	2,320.0

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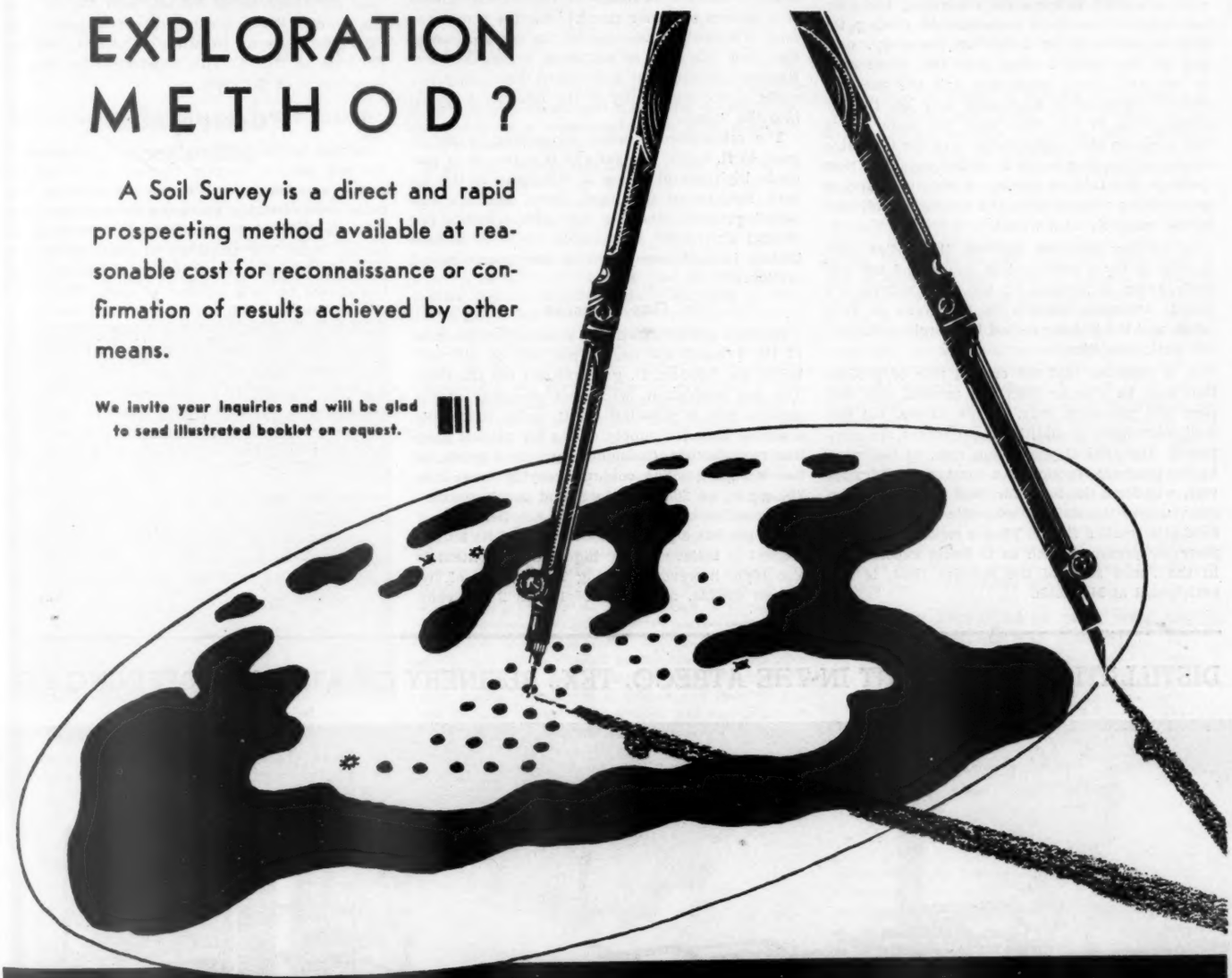

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in Arkansas, has resulted in a favorable pressure-production relationship at Magnolia to date. Since the first of the year, when active drilling began on a large scale, production allowables have risen from 1,191 to 11,070 bbl. daily, and the reservoir pressure has remained effectively constant. The present production rate, due to increased well completions and the making up of back allowables, approaches 12,000 bbl., but the practice of producing back allowables will cease this month.

Bottom-Hole Pressure Tests

A series of bottom-hole pressure tests in key wells are used as bases for computing the average reservoir pressure each month. During the first several months following discovery, only one or two wells, located near the north edge of the field, were producing and the pressure decline represented conditions only on the extreme flank of the field near the water level. The pressure rise registered in 5 of the 6 months surveyed this year is due to added weight of new wells in the thicker section of the lime, and is approaching more closely the average conditions in the reservoir as a whole.

In making pressure surveys, the entire field is shut in for a period of 24 hours, and the key wells, seven in number for the latest survey, are tested. Pressure buildup in the wells is very rapid, and the 24-hour period is entirely sufficient for static conditions.

It is expected that the critical rate of production may be greater than the present one, but pipe line proration may, in the future, cut per well allowables as additional producers are completed. The critical production rate, as indicated by the pressure reaction to a constant withdrawal rate, will form the basis for field proration, however, unless the daily marketable outlet for the field is a smaller figure. Thus a rapidly declining reservoir pressure, such as is being experienced in the Jones sand of the Schuler field, is not anticipated at Magnolia.

The considerable thickness of oil section in the field allows much leeway in the completion of wells. About half of the producers are completed with open holes, by setting the oil string about 40 ft. below the gas-oil contact. The remaining wells are completed through perforations, with the casing seats averaging 150 ft. below the gas cap. As the oil withdrawals bring water encroachment to the level of the deeper wells, squeezing and reperforating higher in the lime will be accepted procedure. One such well was perforated at three levels, the deepest 170 ft. below the gas. Deeper production effected in these wells will provide uniform drainage of the porous lime if it is broken by dense streaks near the water contact, a condition indicated in the east section of the field. Whether or not these breaks are continuous has not been determined, since only two wells in the main body of the field have drilled into the water.

The established practice of wetting casing at least 40 ft. below the gas cap is expected to preclude high gas-oil ratios at any time in the future. Because of the water drive, and the sustained pressure, the gas cap will probably not expand downward appreciably to blow around bottom in wells completed in the top of the oil section.

Gas Reserves

Average gas-oil ratios are expected to continue at the present 900 cu. ft. per bbl. of oil, well below the 2,000-cu. ft. gas limit set for the field. The gas production, while not excessive at the present rate of 6,000,000 cu. ft. daily, represents a sizable potential supply of gas for natural gasoline manufacture. Casinghead gas thus produced has a high gasoline content, varying from 2 to 2½ g.p.m. of 26-lb. product, and much recoverable gasoline is now flared with the field gas.

The gas has a gravity of over .9, and its butane content is believed to be high. Sulfur content is also high, however, showing 1,000 grains of hydrogen sulfide, a content of 1½ to 2 per cent. But the large potential reserves of gas produced with oil, and present in the gas cap will furnish gas over a long period for an established gasoline manufacture. Several wells in the field have been equipped with elevated separators and gravity flow for oil to storage, with the expectation of supplying gas to plant gathering systems in the future.

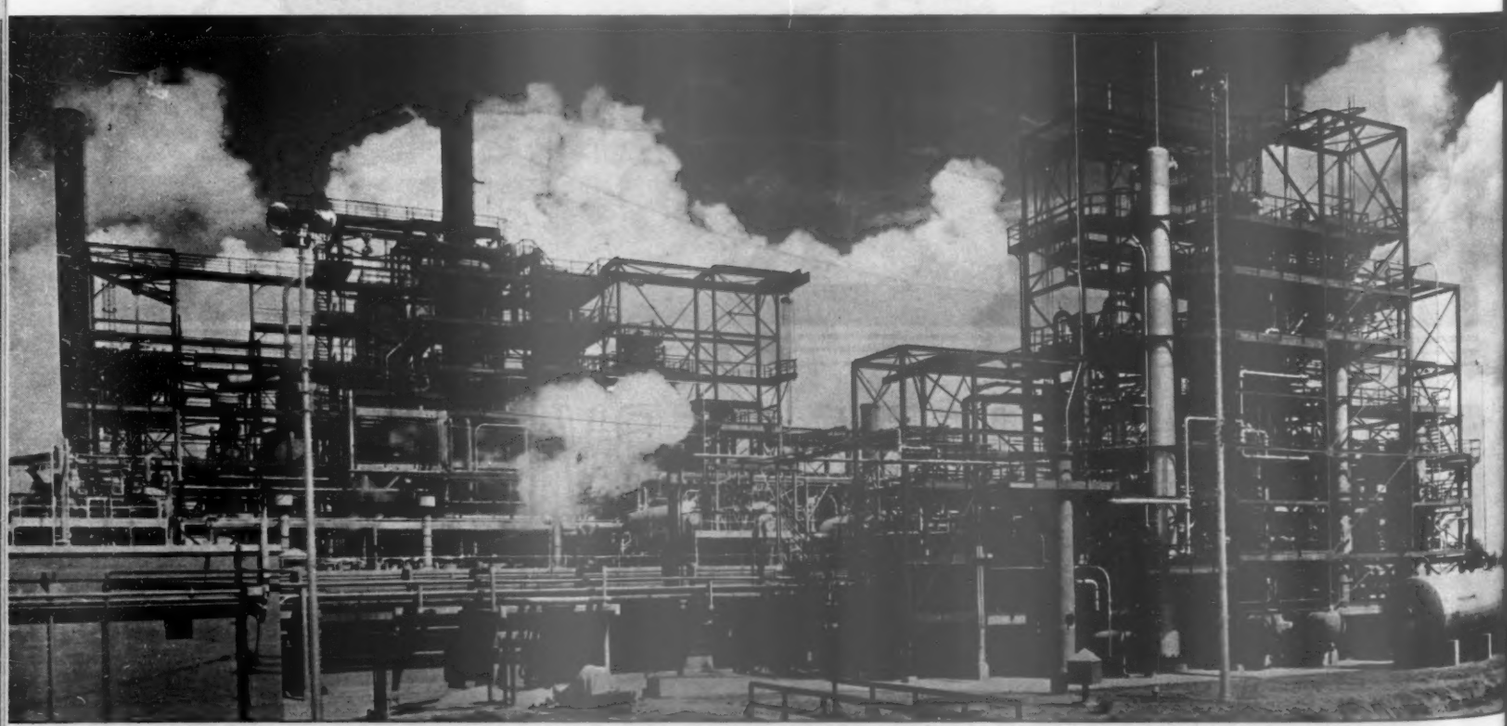
Assuming uniform encroachment of water, the present rate of production is causing a relatively slow rise of the water table. The table extends over an area of about 3,840 acres. The rise is estimated as less than an inch per month. An 85 per cent shrinkage factor for oil, with 750 cu. ft. of the average 900 is assumed as in solution in the oil at the reservoir pressure of 3,400 lb. and temperature of 200° F. This illustrates the long life expectancy of the field.

Drilling Problems

Depths below 7,000 ft. and high pressures in the pay section require the use of heavy rigs and equipment in drilling and completing Magnolia wells. Drilling problems are relatively few, but one danger is encountered in drilling the porous lime. The tendency to stick the drilling string in the hole after the lime has been topped has shown up in a number of cases. This is believed due to a high per cent of filtration of water from the drilling mud into the porous gas zone, caking the mud on the side of the hole and sticking the bit. A chalk anhydrite at 3,200 ft. was first thought to be causing the trouble, but it has been eliminated by the practice of setting the intermediate string through it at 3,200 ft., instead of at 2,200 ft. as required by the commission.

Artificial muds, with a gravity of 9.8 and a viscosity of about 25, are regularly used in drilling the Smackover lime formation. The threat of blowouts following fishing jobs and mud thinning is the most prevalent danger in the development of the field.

DISTILLATION EQUIPMENT IN THE ATRECO, TEX., REFINERY OF ATLANTIC REFINING CO.



Progress in METALS

By W. L. NELSON

Hardness Attained by Flame Hardening

The degree of hardness that is attained by the process of flame hardening is of primary importance to the oil industry because of the severe conditions of wear and abrasion that confront drillers and producers. Flame hardening is conducted by heating the surface of a ferrous material by means of oxyacetylene flame to such a temperature that subsequent quenching by means of water or compressed air will result in a hard, wear-resistant surface.

Steels that contain less than 0.4 per cent carbon cannot be hardened by quenching and hence the carbon content of flame-hardening steels ranges from 0.4 to 0.6—more carbon rendering the surface too hard and brittle.

It is claimed that flame hardening results in a more uniform surface hardness than that attained by the regular methods of quenching-and-tempering or case hardening. In addition to uniformity in surface hardness, flame hardening has the following advantages: (1) the initial investment for equipment is relatively small; (2) the method can be applied to any shape of object and at any place because the equipment is portable; (3) distortion of the object by cooling stresses is minimized; (4) the method may be applied to localized areas without subjecting the entire object to severe quenching; (5) grinding and machining costs are often reduced, and (6) the finished surface is free from scale.

The degree of surface hardness that can be attained in steels and in irons, is indicated in Tables 1 and 2, and Fig. 1, which were taken from the paper entitled, "Flame Hardening," by Stephen Smith, of the Air Reduction Sales Co., before the American Society for Metals in Cincinnati, Ohio, and at Rochester, N. Y., during April. For steels, the difference in hardness is dependent almost entirely upon the carbon content and rapidity of quench, as shown in Fig. 1 and Table 1, and is only mildly affected by the use of various alloy elements. In the case of cast and malleable irons, no such simple relationship is evident and the best that can be said, is that the hardness will vary with the chemical analysis of the iron.

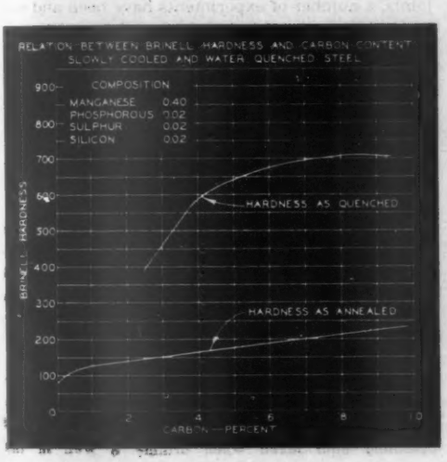


Fig. 1

TABLE 1—BRINELL HARDNESS TESTS ON S.A.E. STEELS AFTER FLAME HARDENING

S.A.E. steel—	Chemical analysis, per cent* Carbon	Chromium	Nickel	Molybdenum	Vanadium	Brinell hardness Compressed air quench	Water quench
1040	0.35	....	....	....	....	....	580
1045	0.45	....	....	....	....	....	625
1055	0.55	....	....	....	....	....	712
1095	1.00	....	....	....	....	....	700
1335	0.35	....	....	....	....	....	500
2330	0.30	....	3.48	....	....	....	600
3140	0.40	0.60	1.25	....	....	....	540
4140	0.40	0.95	....	0.20	....	375	....
4140	0.40	0.95	....	0.20	....	....	525
4640	0.40	....	1.65	0.25	....	415	....
6140	0.40	0.95	....	....	0.17	500	....
51210 Forging	0.12	13.00	....	....	....	444	....
51210 Rolled	0.12	13.00	....	....	....	....	444
Carbon chromium	1.25	0.50	....	....	....	....	†614
Molybdenum	0.68	....	....	0.34	....	....	712
Vanadium	0.90	....	....	....	0.25	....	725

*Manganese, phosphorus, sulfur, and silicon as given by S.A.E. specifications. †Very mild water quench.

TABLE 2—BRINELL HARDNESS TEST ON A NUMBER OF CAST, MALLEABLE AND MEEHANITE IRONS AFTER FLAME HARDENING

Chemical composition—	Cast irons							Malleable irons		Meehanite irons	
Total carbon	3.38	3.46	2.87	2.90	3.00	3.19	2.85	2.30	2.65	3.10	2.88
Combined carbon	.71	.68	....	....	....	.62	.59	.50	.50	.49	.96
Manganese	.74	.71	.85	....	.75	.81	.76	.95	.40	.67	.72
Silicon	1.23	1.28	1.66	....	2.25	2.28	2.04	.98	1.25	1.91	1.42
Nickel	.50	1.08	1.57	.30	.20	....	....	....	....	....	....
Chromium	....	....	.29	.70	.20	.37	.29	....	....	.06	.11
Molybdenum	....	....	....	.70	.35	.23	.30	....	....	....	....
Hardness:											
Before flame hardening	215	215	217	225	225	187	192	175	215	241	350
After flame hardening	555	507	550	525	540	525	555	401	525	472	560

Progress in Malleable Iron

Although the oil industry is not classed as a large user of malleable iron, it does use large quantities of malleable pipe fittings and similar small castings. The services filled by malleable iron are not spectacular ones but any improvement in castings or reduction in cost is worthy of note. Aside from the advantages of a cheaper but equal quality product, the main advancement that will be of interest to the oil industry is the stronger castings that are now being offered. These strong castings are referred to as pearlitic malleable irons, arrested malleablized steel or simply high-strength malleable iron—and by many trade names such as Pomoloy[1] of the Pomona Pump Co., Belmalloy[2] of the Belle City Malleable Iron Co., and ArMa steel[3] of the Saginaw Malleable Iron Division, General Motors Corp. These products are not entirely the same but they do have in common the property of high strength.

ArMa steel is named to describe its manufacture, namely, arrested malleablized steel. In producing ordinary malleable castings, heating has been continued for so long a time that essentially all of the carbon has accumulated into nodules leaving nearly pure iron behind as the material that composes the main body of the casting. In ArMa steel the malleablizing action is arrested or stopped short of complete separation of carbon as graphite, and hence some of the carbon remains in the iron forming a body material that is similar to steel in many respects. It may be quenched and tempered to gain strength and hardness, it may be nitrided to give a hard surface or it may be surface hardened by flame hardening. These operations may also be conducted on steel.

Typical physical properties in the oil-quenched and tempered condition are shown in Table 1. It will be noted that these physical properties correspond approximately to the properties of medium carbon steel except that the ductility is somewhat low. However, in actual tests, the material wears better and, in general, performs better than steel of the same general properties. It is more readily machinable than similar steel because of the graphite pockets which are dispersed throughout the material. The General Motors Corp. is considering the use of the material for such parts as crankshafts, pistons for Diesel engines, connecting rods, valve rocker arms, etc.

TABLE 1—PROPERTIES OF ARMA STEEL, OIL QUENCHED AND TEMPERED

Ultimate strength	Yield point	Per cent elongation	Hardness No.
108,000	95,000	1.5	285
105,000	90,000	2.5	269
95,000	82,000	4.0	241

Much the same may be said for the other two strong irons mentioned above except that Pomoloy is considered to be more similar to gray iron than to malleable iron or steel.

Cheaper Irons

Cheaper but equally satisfactory irons are being produced by the larger manufacturers by shortening (and controlling) the time required for malleablizing.[4] For many years the common time cycle in producing malleable castings was somewhat as follows:

1. Heat to 1,550-1,650° F.	30-40 hours
2. Soaking at 1,550-1,650° F.	50-65 hours
3. Cooling and holding at 1,200° F.	80-90 hours
4. Cooling to 500-600° F. and remove	10-20 hours
Handling time	5-10 hours
	175-225 hours

This long cycle of heating was and is expensive because of the large capital outlay for furnaces and the large fuel consumption. The newer, cheaper methods depend upon higher temperatures and shorter lengths of time. Obviously, special equipment, rigorous plant control and a relatively large throughput are necessary if shorter cycles are maintained. When using pusher-type continuous equipment, cycles of 30-50 total hours are commonly attained and when using a roller-hearth type of equipment, the time has been reduced to even 12½ hours.

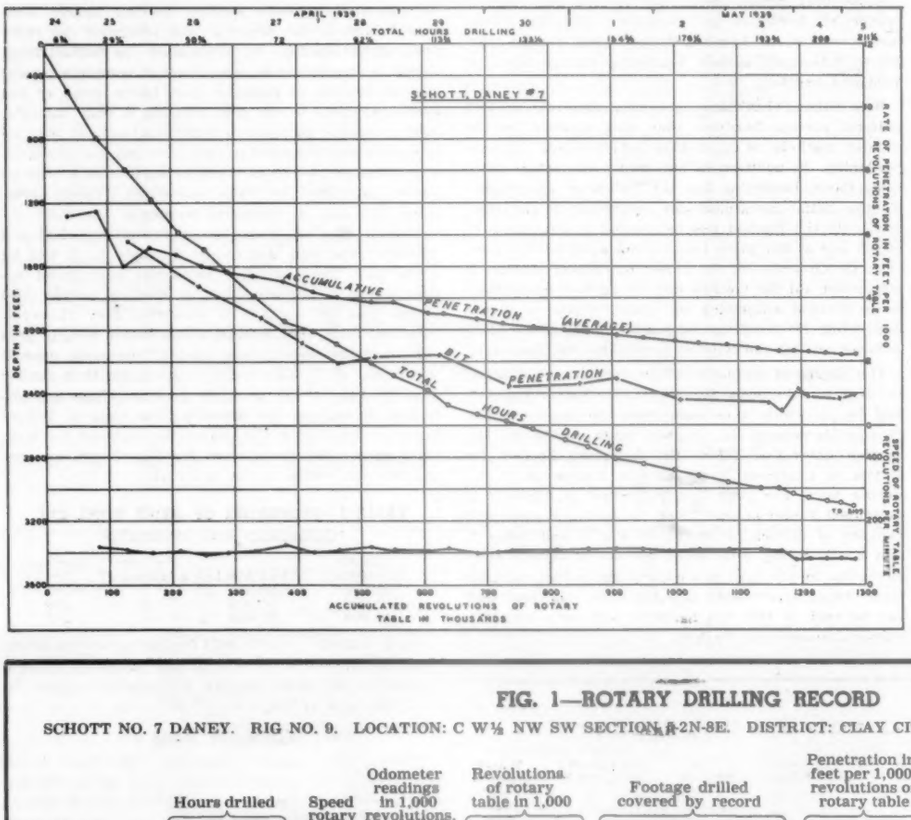
References

1. "40,000-lb. Unalloyed Gray Iron . . ." Iron Age, June 1, 1939.
2. "Pearlitic Malleable Iron," Iron Age, April 20, 1939.
3. C. F. Joseph—"ArMa Steel," Iron Age, May 25, 1939.
4. W. F. Ross—"Short Cycle Annealing of Malleable Iron," Iron Age, May 4, 1939.

DRILLING PRACTICE COMMITTEE

OF A. P. I. REPORTS ON PROGRESS IN ILLINOIS

The following article is a report of the drilling practice committee, eastern division, American Petroleum Institute, of which R. W. McIlvain, Jr., is chairman. It covers primarily the costs and improvements in rotary and cable-tool drilling in Illinois and West Virginia.


APRIL 1939
MAY 1939
TOTAL HOURS DRILLING
SCHOTT, DANEY #7
ACCUMULATIVE PENETRATION (AVERAGE)
BIT PENETRATION
TOTAL HOURS DRILLING
DEPTH IN FEET
RATE OF PENETRATION IN FEET PER REVOLUTIONS OF ROTARY TABLE
SPEED OF ROTARY TABLE REVOLUTIONS PER MINUTE
ACCUMULATED REVOLUTIONS OF ROTARY TABLE IN THOUSANDS

SOME 3,333 wells, ranging in depth from 1,500 ft. to 3,300 ft. have been drilled in Illinois in the past two years, and many more will be drilled in the future. Practically all of the drilling has been done with rock bits, but considering the depth, the cost per foot is quite high.

One of the contributing factors to the high cost is tool-joint wear. In general, tool joints are good for only.8 to 13 wells when used in 3,300-ft. drilling. At this particular depth the minimum tool-joint cost per well ranges from $350 to $450. Most of this experience has been with tool joints on 4½-in. o.d. drill pipe. In order to prolong the life of the tool joints, a number of experiments have been and are being made in hard-facing the tool joints. Electric tube borium, Haystellite, electric Stoodite, and several other hard alloys have been used. Since so little data have been accumulated to date, it has not been possible to make a reliable recommendation in regard to hard-facing tool joints; however, it is believed that in time the proper method can be found and will result in a considerable saving, both to contractors and to operators. At present the trend in size of drill pipe is from 4½ in. o.d. to 3½ in. o.d. Hard-surfacing experiments have been tried on 3½-in. tool joints, as well as making the tool joints half inch oversize in diameter. The obvious requirements which must

Fig. 1—(Below) Sample data sheet for one particular well, showing the various headings used in compiling record. Fig. 2—(Left) Graphic presentation of typical operating data taken when drilling a well in the Illinois basin area

FIG. 1—ROTARY DRILLING RECORD

SCHOTT NO. 7 DANEY. RIG NO. 9. LOCATION: C W½ NW SW SECTION 8-2N-8E. DISTRICT: CLAY CITY, ILLINOIS. SIZE OF DRILL PIPE: 4½ INCHES

Date April	Tour	Hours drilled: For tour	Hours drilled: Accumulated	Speed rotary table r.p.m.	Odometer readings in 1,000 revolutions. End of tour	Revolutions of rotary table in 1,000: For tour	Revolutions of rotary table in 1,000: Accumulated	Footage drilled covered by record: For tour	Footage drilled covered by record: Accumulated	Footage drilled covered by record: Total depth	Penetration in feet per 1,000 revolutions of rotary table: For tour	Penetration in feet per 1,000 revolutions of rotary table: Accumulated	Record: Depth and odometer readings in 1,000 rev.: Removed—Depth	Record: Depth and odometer readings in 1,000 rev.: Removed—Reading	Record: Life: Footage	Record: Life: Revolutions in 1,000	Record: Feet cut per 1,000	Record: Wt. on bit
24	3	6¾	6¾	105	37	37	37	245	245	482	6.62	6.62	....	....	....	....	....	....
25	1	7½	14¼	120	81	44	81	304	549	786	6.9	6.75	....	....	....	....	....	....
..	2	7¾	22	110	129	48	129	200	749	986	4.16	5.0	986	129	749	129	5.81	....
..	3	7¼	29¼	100	169	40	169	194	943	1,180	4.85	5.6	....	....	....	....	....	....
26	1	7½	36¾	105	213	44	213	201	1,144	1,381	4.56	5.4	....	....	....	....	....	....
..	2	7¼	44	95	252	39	252	117	1,261	1,498	3.00	5.0	1,485	243	499	114	4.38	....
..	3	6¾	50¾	100	288	36	288	125	1,386	1,623	3.50	4.8	....	....	....	....	....	....
27	1	7½	58¼	105	332	44	332	167	1,553	1,790	3.80	4.7	....	....	....	....	....	....
..	2	7	65¼	125	380	48	380	156	1,709	1,946	3.20	4.5	1,820	345	335	102	3.32	....
..	3	6¾	72	100	423	43	423	67	1,776	2,013	1.56	4.2	1,977	406	157	61	2.58	....
28	1	6¼	78¼	110	463	40	463	74	1,850	2,087	1.84	4.0	2,084	460	107	54	1.98	....
..	2	8	86¼	120	516	53	516	122	1,972	2,209	2.30	3.82	....	....	....	....	....	....
..	3	6¼	92½	110	552	36	552	86	2,058	2,296	2.4	3.83	2,220	523	136	63	2.16	....
29	1	8	100½	110	606	54	606	85	2,143	2,380	1.58	3.52	....	....	....	....	....	....
..	2	5½	106	115	639	33	639	95	2,238	2,475	2.88	3.50	2.450	629	230	106	2.17	....
..	3	7¾	113¾	100	684	45	684	63	2,301	2,538	1.40	3.36	....	....	....	....	....	....
30	1	7½	121¼	105	732	48	732	37	2,338	2,575	.77	3.19	....	....	....	....	....	....
..	2	6	127¼	110	773	41	773	55	2,393	2,630	1.34	3.1	2,578	738	128	109	1.17	....
May	3	8	135¼	110	822	49	822	61	2,454	2,691	1.24	2.98	....	....	....	....	....	....
1	1	6	141¼	110	860	38	860	44	2,498	2,735	1.16	2.91	2,721	848	143	110	1.3	....
..	2	7	148¼	110	904	44	904	70	2,568	2,805	1.60	2.84	....	....	....	....	....	....
..	3	6½	154¾	110	948	44	948	35	2,603	2,840	.80	2.75	2,805	904	84	56	1.5	....
2	1	8	162¾	110	998	50	998	40	2,643	2,880	.80	2.65	....	....	....	....	....	....
..	2	6	168¾	110	1,037	39	1,037	36	2,679	2,916	.93	2.58	2,890	1,013	85	109	.77	....
..	3	7½	176¼	110	1,085	48	1,085	33	2,712	2,949	.69	2.5	....	....	....	....	....	....
3	1	8	184¼	110	1,135	50	1,135	36	2,748	2,985	.72	2.42	....	....	....	....	....	....
..	2	5	189¼	110	1,163	28	1,163	12	2,760	2,997	.43	2.37	2,992	1,150	102	137	.75	....
..	..	..	..	..	..	..	..	..	..	..	..	..	2,997	1,163	5	13	.38	....
..	3	4½	193¾	80	1,186	23	1,186	28	2,788	3,025	1.21	2.35	....	....	....	....	....	....
4	1	4¾	198½	85	1,213	27	1,213	28	2,816	3,053	1.03	2.31	3,033	1,194	36	31	1.16	....
..	2	4¾	203¼	80	1,240	23	1,240	23	2,839	3,076	.85	2.29	3,066	1,228	33	34	.97	....
..	3	4¾	208	80	1,262	22	1,262	20	2,859	3,096	.90	2.26	3,090	1,256	24	28	.86	....
5	1	3¼	211¼	80	1,277	15	1,277	13	2,872	3,109	.86	2.25	3,109	1,277	19	21	.91	....

be met in regard to lengthening the life of tool joints are as follows:

1. The materials used must definitely extend the life of the tool joints at a profit.

2. The material must be subject to successful field application.

3. The application must be made in such a way that the pressure, sealing, bonding, or reinforcing action of the tool joint and drill pipe is not destroyed. This is particularly applicable in the case of nonwelded tool joints.

It is believed that drilling costs and drilling rates are closely related; and, therefore, as drilling rates can be increased and at the same time be consistent with good practice, an appreciable saving will be made for both the contractor and the operator.

The usual tachometers, indicators, and other instruments have been used in an effort to determine what actually goes on at the bottom of the hole. It is desired to call attention particularly to one instrument, which is an industrial-type tachometer-odometer. The instrument is identical with the speedometer-odometer used by the automotive industry, except that it records total revolutions. The instrument is mounted at any convenient point outside the derrick to minimize vibration and at the same time be in full view of the driller, and is connected to the rotary-table pinion shaft by means of a 25-ft. length of flexible shafting. The operation of the unit is entirely automatic, there being no reset device on the odometer, and it is accumulative up to 100,000,000 revolutions. The total number of revolutions necessary to complete a 100-ft. well below the surface pipe is approximately 1,160,000 revolutions.

Fig. 1 is a sample data sheet for one particular well which, among other things, has the following headings: date, tour, hours drilled by tour, as well as accumulated by tours; footage drilled by tour, and accumulated by tour; speed of rotary table in revolutions per minute; odometer readings in thousands of revolutions by tour, and accumulated by tour, total depth at end of tour; penetration in feet per thousand revolutions of rotary table by tour, and accumulated by tour; the set number, size and type of bit used; the life of the bit shown in footage, and total revolutions in thousands; the number of feet cut per thousand revolutions, as well as the average weight on bit during tour.

This particular data sheet shows that when using an 8¾-in. rock bit the best run per bit was 749 ft. immediately under the surface pipe and made a total of 129,000 revolutions. This is an average of 5.81 ft. cut per thousand revolutions. One bit was worn out after it made a total of 54,000 revolutions, but during this time it had made 107 ft. of hole, or 1.98 ft. per thousand revolutions. Another bit made a total of 137,000 revolutions while cutting 102 ft. of hole. This amounts to 0.75 ft. per thousand revolutions and for an 8¾-in. bit represents the least amount of hole cut per thousand revolutions. Several runs on a 4⅞-in. bit are shown on the sheet and the number of revolutions and footage made by the bits are very much less than in the case of an 8¾-in. bit.

Fig. 2 is a sample chart on which curves are plotted to graphically show the more essential information previously mentioned. It is hoped that by the use of these data the following conclusions can be drawn:

1. Determination of optimum rotative speed for various phases of drilling operations.

2. Determination of optimum rotative speed for various formations.

3. Determination of best type and make of bit.

4. Defining bit life with greater accuracy.

5. Improved correlations of all factors which may affect drilling rates.

This instrument has not been in use long enough to permit recommendations at this time, but it has been in operation long enough to reveal the potentialities that may be realized in the future.

In a number of the newer Illinois fields, as well as the older ones, several producing areas, sep-

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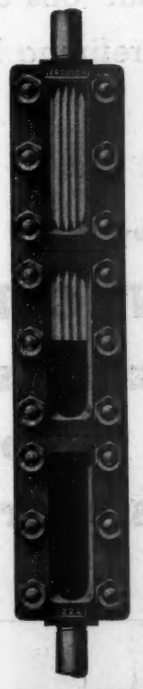

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arated by varying thicknesses of shale, are found. In the older fields it has been the practice for the past 20 to 25 years to produce from two or more pays at the same time. It has been the practice to set the oil string on top of the first sand, and run a liner to bottom and pack off the intervening shale bed. Recent practice has been to run the oil string through the pays and spot cement behind the oil string at least 300 to 400 ft. above the first pay. When this is done, a drillable metal, or a metal that can be removed through the use of acid, is set opposite the pay zone.

Heavy Texas pattern casing shoes are used at both the top and bottom of each pay in order to prevent damage to the casing when the sands are shot with nitroglycerin. This method of completion is less advantageous in those cases where the thickness of the intervening bed of shale is relatively small, as 20 ft. or less. In some instances when a well is shot, some difficulty has been experienced in making the steel pipe opposite the shale break stay in place. The tendency is for the steel pipe to drop down the hole opposite the lower pay. Wings welded on the short steel sections in question, and a number of other things, are being tried to overcome this difficulty. When shooting, most of the operators oil or sand-tamp the wells. A new application of tamping, which may or may not prove to be superior to sand tamping, is the use of a fast-setting gypsum-type cement, which has only been available to the industry for a short time.

It is believed that fewer changes have been made in cable-tool practice over a period of years than have been noted in other phases of the industry. In this connection, during the past year a drilling dynamometer has been perfected in an effort to increase cable-tool drilling rate.

In a certain field in West Virginia it required 55 days to drill a 3,000-ft. well, using a 5½-in. o.d. oil string. By the use of the dynamometer, the drilling time on a number of wells has consistently been reduced to 30 days, or an overall reduction of almost 50 per cent. Through an inspection of the dynamometer charts it was found that all of the cable tool drillers involved drilled with too tight a hitch. The idea of the most effective hitch was the one that made the most noise and jarred the derrick the most.

The increased drilling speed mentioned above was arrived at by taking what the drillers called a loose hitch, and increasing this by a matter of 4 or 5 ft. It is believed that more work in this connection would prove beneficial to those operators in Pennsylvania and elsewhere who are drilling deep cable-tool wells.

This opportunity is taken to acknowledge with thanks the work and efforts of the various members of the drilling practice committee of the eastern district, and particularly those of Bart DeLaat, production engineer for the Pure Oil Co., who accumulated and tabulated most of the data mentioned above.

Modernizing Smoke-Box End of High-Pressure Boilers

Safer and neater installation of boilers and equipment has attracted drilling contractors and production men for the past several years. Heavier connections have become regular practice and the use of fuel and water headers has gained wide favor.

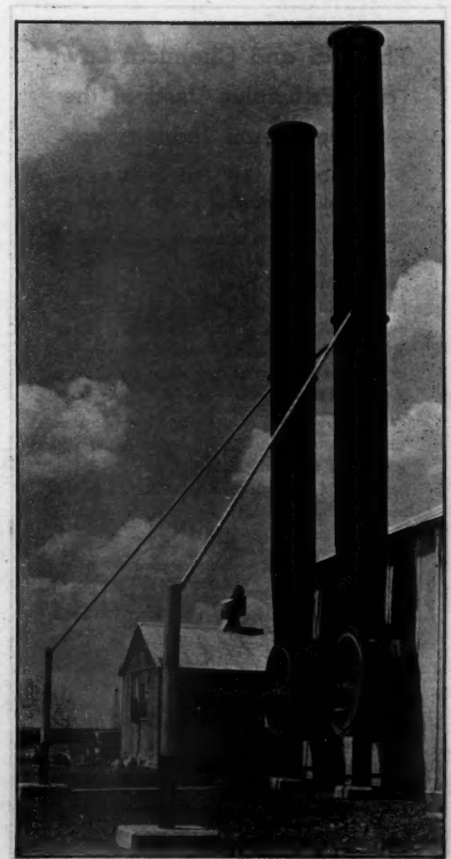
The photograph shows what can be done to modernize the smoke-box end of a battery of boilers used on a lease. The old system of blocking up the barrel with wooden timbers has been discarded and a pedestal of 12-in. pipe setting on a large concrete block is used, making a much neater and more permanent installation.

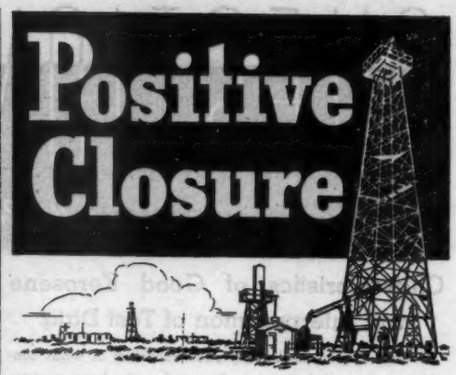
This operator did not want the ground in the rear of his boiler shed torn up by the water and steam from the boiler blow-off valves so he cut holes in the pedestals, ran the blow-off pipes through them and then bent the blow-off lines and carried them out to the side. To prevent anyone stumbling over them, he buried them as near to the boilers as possible.

Pop-off valves make a deafening noise when the boilers are out in the open and when inside a building the vibration is unbearable. Directing the pop-offs upward frequently results in the sheet metal roofing being blown off. To prevent this, these boilers have a line running from the pop-off valves to building's exterior, coming out just to the left of the boiler stacks.

On high-pressure boilers such as those shown, a high stack is often necessary to obtain the draft for firing. Formerly, guy lines were used to hold these stacks in a vertical position. Practice in recent years has been to eliminate guy lines wherever possible because of the danger of breaking during wind storms, or being pulled over by a truck fouling on them. They are also a source of danger for the men as they are invisible at night.

Ordinarily, the stacks are braced by an inch and a half pipe fastened to the boiler domes but in this case that would require cutting a hole in the roof. This operator set two uprights of 6-in. pipe in heavy concrete blocks and used them to support the guy rods. These give a very rigid support and are less dangerous than guy lines.





A valve must provide positive closure, even after years of service in the open position. The *best* valve guarantees this effect with wide, *self-releasing* 30° angle wedges, and *flexible-action* gates which automatically adjust themselves to seats. It permits no pressure shock.

The best valve also assures smooth, positive operation by unwedging and freeing gates *before* raising, wedging them only when they are directly opposite ports. It cleans itself and has no internal guides to cause foul-up; it allows ready replacement of parts through ample tolerances.

Only the parallel seat, double wedge type slide gate valve provides *all* these essential benefits. This principle, developed and perfected by Ludlow, has been universally accepted and preferred for oil, gas, and water lines since 1866.

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QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Characteristics of Good Kerosene and Interpretation of Test Data

Would appreciate having your definition of what constitutes a good kerosene. Do crude oils from various sections of the United States produce kerosenes of different qualities or is it the process of treating which is the determining factor? Can the quality of a kerosene be determined from the distillation curve? Does the thermoviscosity tell very much about the burning quality of a kerosene?—H. E.

Kerosene is the fraction separated from petroleum after collecting the gasoline and before the product called gas oil. The boiling range of kerosene is between 300° and 625° F., the approximate range for gasoline is 100° to 437° F., and gas oil may have an initial boiling point around 500° F. Therefore, kerosene contains some light hydrocarbons of the gasoline type and others, high boiling, are included in the gas oil fraction, so the basic properties of kerosene depend on the skill with which the refiner separates the fraction from the crude oil. The raw product must be treated to remove objectionable substances in order to produce an oil of excellent qualities.

The specifications for commercial kerosene are frequently made to cover only a few properties, such as gravity, flashpoint, color, and doctor test, but they include other characteristics where exceptional quality is demanded. These may be cloud, corrosion, distillation, sulfur, burning test, and thermoviscosity.

It is the proportion of the lighter hydrocarbons that influence the volatility, which should be low enough to give good evaporation from the wick of a lamp and to assist complete combustion, yet not so volatile that combustible vapors are evolved at a low temperature to make a hazardous condition with respect to explosion and fire. It is the high boiling portion that is largely responsible for poor burning tendencies of kerosene, for it is liable to contain aromatic and tarlike substance that produce char and smoke. Some of these may be controlled by adequate treating with acid and filtering through fuller's earth. High sulfur and high thermoviscosity are also responsible for poor burning tests. A high-grade kerosene should be negative to both doctor and corrosion tests.

The kerosenes of the United States vary between 40° and 48° A.P.I. gravity, the higher values representing those of best quality. Color from 16 to 30, the larger numbers being found among the better grades. Flashpoint varies between 100° and 150° F. or more, but should not be lower than 115° F. Kerosene is available which has a distillation range between 330° and 520° F. The sulfur content may run around 0.1 per cent, but in a highly purified oil it seldom exceeds 0.02 per cent. The lamp or burning test should be made over a minimum period of 48 hours and an exceptional oil will give good results up to 72 hours. The thermoviscosity may be interpreted as reflecting volatility, wick feed and consumption, and burning qualities. As a rule the lower the viscosity the greater the consumption. High viscosity suggests poor wick feed and, therefore, poor burning test. The thermoviscosity of kerosenes found on the market varied from 340 to 450, the higher figure was for an oil of poor quality. The purification operations in the refinery should always include thorough washing, because organic salts of calcium, sodium, and magnesium may be dissolved in the oil to cause instability of color and poor burning qualities.

The crude oils from the different parts of the country yield kerosene which may vary considerably in properties. In some instances a high-grade kerosene may be made to quite closely resemble the product from another oil, provided the crude oils are similar. Frequently it happens that the quantity is not sufficient or the expense of adjusting the properties and removing impurities does not warrant manufacturing the product. Of course, kerosene of exceptional quality commands a much higher price than the ordinary product.

Preparation of Pure Isooctane

What is the method used for making isooctane? Is it obtained from petroleum?—D. S. K.

Pure isooctane, the true chemical name being 2,2,4-trimethylpentane, is made by the catalytic hydrogenation of the diisobutylenes obtained from ter-butyl alcohol or isobutylene and sulfuric acid. This substance is used as a standard for determining detonation properties, "knock rating" or "octane number" of gasoline.

Isooctane is now replaced to a large extent for knock testing purposes, by standard reference fuels at much lower cost.

Reference: Whitmore, Organic Chemistry, p. 26.

Physical and Chemical Laws and Principles Used in the Petroleum Industry

RAOULT'S LAW FOR LIQUIDS

(Composition influences partial pressures)

When a volatile substance is one of the components of a liquid, its partial pressure is equal to its mol fraction present times its pressure in the pure state at the same temperature. This means that the vapor pressure of a liquid is raised or lowered in proportion to the mol fraction of the substance present in the solution.

Example: What is the partial vapor pressure of benzene at 80° C. when 5 per cent toluene is present? Molecule weight of benzene is 78.05 and toluene 92.06; then 100 parts by weight of the mixture contains

$$\frac{95}{78.05} = 1.217 \text{ mols benzene and } \frac{5}{92.06} = 0.0543 \text{ mols toluene.}$$

The total is 1.2713 mols, therefore

$$\frac{0.0543}{1.2713} = 0.0427 \text{ mol fraction of toluene}$$

and $1 - 0.0427 = 0.9573$ mol fraction of benzene. Pure benzene has a vapor pressure of 753.6 mm. at 80° C., so $753.6 \times 0.9573 = 721.5$ mm., the partial pressure of benzene for the mixture.

Composition of Chromium-Nickel Liners for Refinery Vessels

Could you give me some information covering the proper composition of chromium-nickel liners for evaporators and towers to reduce corrosion due to high sulfur oil?—L. G. N.

There is much information on the subject of the various alloys used in the construction of petroleum refinery equipment to combat corrosion, in the paper presented by J. A. Jamison read before the November 1938 A.P.I. meeting. The 11-13 per cent chromium lining is discussed.

The lining of vessels with 11-13 chromium has been practiced in California, West Texas, Michigan, and the Mid-Continent. The metal is about 0.10 in. thick (10-12 B.W.G.), some of which has remained in service after 70,000 hours' operation with a California cracking unit feed having a gravity 26°-28° A.P.I. and sulfur 0.7 to 0.9 per cent.

The West Texas oils are known to be exceedingly corrosive. Handling oil from Ward, Winkler, and Porterville, with the entire evaporator and bubble tower lined with 11-13 chromium, corrosion was noted after an exceptional run of 25,000 hours at the top of the bubble tower, but the rest of the liner in both vessels was not impaired. The properties of the stocks processed were as follows: The crude oil, gravity 28-40, contained sulfur 0.2 to 1.5 per cent, water and sediment 0.2 to 1.0 per cent and salts 50 to 400 lb. per 1,000 bbl. The cracking stock, topped crude oil, was 24° A.P.I. gravity, with 1.7 per cent sulfur.

In towers operating above 200 lb. pressure, it is almost always the rule to cover the entire evaporator and the bubble tower extending at least to the tray of the fresh feed inlet.

Towers equipped with 11-13 chromium liners usually operate at 200 lb. pressure or higher, and are in many cases lined completely, from the bottom head of the evaporator to the top head of the bubble tower.

The 11-13 per cent chromium sheets have been found highly resistant to the conditions met with in refining. The specifications covering the composition of the metal are given in the table.

COMPOSITION SPECIFICATIONS FOR 11-13 CHROMIUM

Element—	Per cent (max.)
Chromium	11-13
Carbon	0.080
Nickel	0.500
Manganese	0.700
Silicon	1.000
Phosphorus	0.035
Sulfur	0.035

This specification is from the recent article by J. T. Shaler in The Oil and Gas Journal, where additional details concerning the use of chromium sheet linings may be found.

References: J. A. Jamison, Corrosion Protection of Refinery Equipment, A.P.I. meeting, Chicago, November 17, 1938. J. T. Shaler, Field Installation of Chromium Sheet Linings in Pressure Vessels, The Oil and Gas Journal, May 18, 1939, p. 96.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired, postage should be included.

FIELD OPERATIONS

Summarizing the Week's Developments

OKLAHOMA—The Cement field, Caddo County, was extended ¼ mile southwestward. A new productive spot was opened south of Konawa in southwestern Seminole County. A 7,344-bbl. producer was completed in the Ramsey pool.

KANSAS—Six wildcats are under way in the Kansas sector of the Forest City basin, four having been started in the past week, and two already drilling. A productive area was opened 1¼ miles southeast of the Wherry pool, Rice County. The Brown pool was completed in Cowley County. The Prusa pool, Barton County, was extended ½ mile southeastward.

TEXAS: Gulf Coast—Heavy rains retarded operations on the Gulf Coast. A 10,000-ft. test will be drilled in the J. Defore Survey, in the Hull field, Liberty County. The discovery well in the Martha field in Liberty County flowed 240 bbl. of 41-gravity oil in a 24-hour test.

Southwest Texas—Promise of a new pool in the Robstown area in Nueces County, and opening of oil production in the La Gloria distillate field in Jim Wells County were the week's features.

West Texas—A link is added to the Wasson-Bennett-Denver fields, and an extension to Wasson-Bennett, north of the eastern edge of that field, was in prospect. A new refinery at Levelland, with a capacity of 4,500 bbl. of crude per day, will stimulate work in the northern Permian basin. The Slaughter and Duggan pools were given higher allowables to provide crude for the new plant. The Sharon pool in Scurry County was given two extensions.

West Central Texas—Inadequate pipe line outlets are retarding Jones and Shackelford counties new pools. Humble Pipe Line Co. plans to increase its facilities to give the required relief. An 8,000-ft. test will be drilled in Nolan County. A new deep pool is in prospect in Stephens County, near the Shackelford County line.

North and East Texas—Cooke County has a new pool in an 1,100-ft. horizon, 1¼ miles south of the Voth shallow pool. Discovery of the Burnett pool in Montague County has led to active leasing. In eastern Texas two wildcats in the deep Opelika area in Henderson County were dry and abandoned. A Rusk County test and one in Rains County were also dry and abandoned.

LA-ARK-TEX—South Louisiana is experiencing its busiest year in field work. A new pay was opened in the Abbeville pool in Vermilion Parish in the 10,000-ft. horizon. A wildcat drilled to 10,383 ft. in Avoyelles Parish was abandoned. A deep test in Webster Parish, North Louisiana, was abandoned at 10,400 ft. In Arkansas a test 10 miles south of the Magnolia field in Columbia County is showing oil saturation.

ILLINOIS—Production increased to 265,693 bbl. per day, of which 255,993 bbl. per day was from the basin fields. A new refinery at Pana gives the Louden field an additional outlet. Completions in the state dropped to 57 last week, a decline of 19 from the previous week.

NEW MEXICO—Interest in New Mexico operations continued to center in the Loco Hills area, Eddy County, which was given a 1½-mile southwestward extension. Another Loco Hills well flowed 332 bbl. of oil in 6 hours to rate as the biggest producer in the pool to date. A well in the Lovington pool, Lea County, flowed 492 bbl. of oil in 17 hours.

Completions in All Fields

(Week Ending July 15, 1939)

	Oil	Gas	Dry	Total	1939 total comp. to date	1938 total comp. to date
N. Y., Pa., and W. Va.	50	13	5	68	1,663	2,110
Ohio	10	9	2	21	510	499
Indiana	3	0	3	6	126	42
Kentucky	6	0	8	14	344	446
Illinois	43	1	13	57	1,843	650
Michigan	17	4	12	33	717	443
Kansas	26	1	8	35	640	912
Oklahoma	30	1	16	47	996	958
Texas:						
North Central Texas	25	3	15	43	1,305	1,688
West Texas	31	0	4	35	1,008	1,113
Texas Panhandle	5	2	0	7	212	337
East Texas	8	0	1	9	270	1,162
East Central Texas	1	0	6	7	139	198
East Texas Border	1	1	2	4	40	83
Gulf Coast Texas	24	1	5	30	740	672
Southwest Texas	17	1	17	35	1,272	1,109
Total Texas	112	8	50	170	4,986	6,362
North Louisiana	5	3	3	11	281	336
Gulf Coast Louisiana	6	0	6	12	318	254
Total Louisiana	11	3	9	23	599	590
Arkansas	3	0	0	3	127	131
Montana	0	0	0	0	76	47
Wyoming	4	0	1	5	50	86
Colorado	0	0	1	1	5	6
New Mexico	9	0	2	11	325	302
California	9	2	1	12	487	722
Total United States	333	42	131	506	13,494	14,306
Total previous week	364	45	140	549		
Week ending July 16, 1938	311	35	100	471		

Outstanding Fields—Highlights

(Week Ending July 15, 1939)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	28	50	7	4,555	1,050	24,850
Wasson-Bennett	16	65	12	12,060	343	15,896
Ector County	21	61	3	1,238	1,759	46,400
Pecos County	18	35	3	578	1,155	36,200
Jones County	12	28	1	3,000	519	8,300
East Texas	8	22	8	352	25,944	373,097
OKLAHOMA						
St. Louis	5	31	4	456	860	36,725
KANSAS						
Barton County	3	17	1	457	435	14,145
Ellis County	4	15	1	1,167	397	10,305
Rice County	5	27	5	2,469	1,345	30,535
Russell County	4	29	11	5,248	1,259	24,330
NEW MEXICO						
Lea County	10	50	8	2,950	2,183	106,020
LA-ARK-TEX						
Magnolia, Ark.	0	16	0	0	37	11,445
Cotton Valley, La. (deep)	0	8	0	0	131	11,425
MICHIGAN						
Freeman-Redding	4	14	4	4,300	98	13,338
Walker	5	23	3	4,300	57	6,732
ILLINOIS						
Salem field	10	71	18	5,455	1,053	148,607
Louden field	6	68	12	2,777	942	55,035
Other basin fields	24	199	13	5,091	1,438	52,251
Old fields						9,700
CALIFORNIA						
Wilmington	4	23	1	251	661	82,000

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By STAFF CORRESPONDENT

Drop in Week's Completions But Production On Increase

CENTRALIA, Ill., July 17.—Illinois production continued to mount during the past week although completions and first reports declined; there was a further drop in the average initial production of the successful oil completions. A gas well was added in White County when Angle & Angle and Eason Oil Co. No. 1 Storms blew out from the Waltersburg sand while drilling crews were attempting to test the McClosky. It was estimated good for 12,000,000 cu. ft. daily with a rock pressure of 985 lb. per square inch.

Salem field continued to lead the state in production although it showed only a slight increase to 148,607 bbl. daily; Louden jumped its production 6,080 bbl. daily to a new high of 55,035 bbl. daily. Part of Louden's increase was due to the starting of operations of the Ray Hose interests' 4,000-bbl. refinery, with cracking unit, at Pana, Ill., about 30 miles north of the Louden field. Initial production of new wells dropped in Salem to 5,455 bbl. daily but increased in the Louden pool to 2,777 bbl. daily. Clay County partially regained its place in the sun with five completions for an initial of 3,318 bbl.

There were 12 oil completions in the Louden field, 3 in the St. James field, 1 in the Tonti field, 18 in the Salem field, 5 in Clay County, 2 in White County, 1 in Wabash County, 2 in Wayne County, and 1 in Richland County. The total initial production of new wells in the state was 13,323 bbl.

A total of 57 completions was reported in contrast to last week's 76; 43 of these were oil wells, 11 were dry holes, there was 1 gas well, 1 gas input well and 1 salt-water disposal well. First reports fell 10 to 73 but the new work kept ahead of the completions; 13 of the new tests were wildcats scattered through as many counties.

Most of the abandonments were of wildcats, many of which looked good for a while. Jasper, Richland, Clinton, Marion, Franklin and Perry counties had one each while Wayne had three failures and Edwards County had 2.

Texas Co. was preparing to obtain more production from its City of Centralia lease by drilling of directional holes under the lake which is the town's water supply. Rig for No. 35 City of Centralia is located 160 ft. from the north and 880 ft. from the west line of NW NW Section 9-1n-2e and the hole will be bottomed 348 ft. from the north and 940 ft. from the west line. The top of the hole for No. 13 City of Centralia will be 366 ft. from the south and 92 ft. from the west line of the SE NW of the same section while the bottom of the hole will be located 400 ft. from the south and 275 ft. from the west line.

The Tonti field of Township 3n-2e, Marion County, showed more promise last week than at any time since its discovery with the near completion of a well reported making 800 bbl. through the casing from the McClosky lime. The well is the Harvey No. 3-A Kagy (Salem State Bank), 150 ft. from the south and 810 ft. from the east line of SE Section 33-3n-2e. Harvey opened the field and now has seven producers in the area although previous completions have been between 75 and 100 bbl.

Near Grayville in White County, a wildcat was showing for a possible pool opener; it is T. C. Chism No. 1 Boultinghouse, C W½ SW SW Section 10-4s-14w, which was reported as having to mud off oil rising in the hole in order to run casing to 2,612 ft. Some major companies have taken an interest in the test.

Attempt to curtail development of roadway leases in the Cordes field, Washington County, failed last week when the Nashville Circuit Court dissolved a temporary injunction granted Ohio Oil Co. several months ago to prevent Lilly and associates from drilling on two strips in Section 23-3s-3w. One well was in the sand when shut down and the other had pits dug; they will be completed. The Ohio Oil Co. contended that the strips were dedicated to roadway purposes only but the court ruled the owners were also entitled to mineral rights. The Ohio Oil Co. in dicated it might take an appeal to the ruling.

The Week's Completions

In Fayette County, the Louden field, Carter Oil Co. No. 3 S. Rickett, SE NE NE Section 14-8n-3e, Cypress sand 1,458-87 ft., shot with 20 qt., flowed 630 bbl. Carter Oil Co. No. 2 John Hagan, SW NW NW Section 27-8n-3e, Bethel sand 1,496-1,519 ft., 20 qt. shot, pumped 140 bbl.

Whisenant and others No. 14 Lilly, NE SW SE Section 16-8n-3e, topped Cypress at 1,453 ft. and had pay from 1,498 ft. to 1,514 ft., flowed 75 bbl.

Illinois Fields

HIGHLIGHTS OF THE WEEK: A new 4,000-bbl. refinery in Pana, about 30 miles north of the Louden field, gives that field a much desired additional crude oil outlet and resulted in a considerable increase in Louden's production last week. There was a decline of 19 completions last week compared with the previous 7 days. Production continues on the upgrade. A wildcat in White County was giving promise of opening a pool.

Daily average production of new pools, 255,993 bbl.; old pools, 9,700 bbl.: total, 265,693 bbl.

Oil wells completed, 43; total operations including locations, rigs and wells drilling, 434.

Carter Oil Co. No. 4 Fred Brown, NE SE NE Section 31-8n-3e, Cypress sand 1,498-1,542 ft., 60-qt. shot, swabbed 64 bbl.

Paul Doran No. 8 Greelting, SW NE NW Section 32-8n-3e, Cypress sand 1,515 ft., total depth 1,545 ft., shot with 30 qt., pumped 324 bbl.

Oils, Inc., No. 10 Blurton, NE NE NW Section 32-8n-3e, Bethel sand 1,540-70 ft., 60-qt. shot, flowed 520 bbl. (approximately). Oils, Inc., No. 11 Blurton, NE NE NW Section 32-8n-3e, Cypress sand 1,445-1,500 ft., shot with 60 qt., flowed 200 bbl. Oils, Inc., No. 12 Blurton, SW NE NW Section 32-8n-3e, Cypress sand 1,450-90 ft., 60-qt. shot, flowed 224 bbl.

Carter Oil Co. No. 2 Martha Taylor, SE SW SW Section 33-8n-3e, Cypress 1,466-1,510 ft., stray 1,530-70 ft., Bethel 1,582-86 ft., 10 and 40-qt. shots in stray; swabbed 385 bbl. from the three producing zones. Carter Oil Co. No. 11-6 R. Larimore, NE NE SW Section 11-8n-3e, completed as a gas input well in stray 1,563-86 ft. and Bethel 1,592 ft.

Stewart Drilling Co. No. 7 Hoover, SW SE NW Section 9-7n-3e, stray 1,563-80 ft., shot with 20 qt., plugged back 1,576½ ft., pumped 40 bbl. oil and 8 bbl. water. Carter Oil Co. No. 2 Wilbur Hawkins, NW NE SW Section 17-7n-3e, Cypress sand 1,466-1,508 ft., stray 1,546-61 ft., plugged back 1,512 ft. and squeezed with 100 sacks of cement, swabbed 72 bbl. through casing.

Phayer No. 5 Morrison, C E½ NW NE Section 19-7n-3e, Cypress 1,487-1,515 ft., 40-qt. shot, pumped 103 bbl. Jarvis Bros. No. 1 S.W.D.W. Yakey, C W½ SE Section 6-7n-3e, 450 ft. of 7-in. casing and total depth 520 ft., completed as a salt-water disposal well.

In the St. James field, Shulman Bros. No. 8 Combe, NE SW SW Section 6-6n-3e, Cypress sand 1,557-74 ft., 40-qt. shot, pumped 150 bbl. Texas Co. No. 1 E. G. McKee, SE SW NW Section 6-6n-3e, Cypress sand 1,515 ft. and pay 1,532-50 ft., 10-qt. shot, pumped 30 bbl. in 3 hours. Texas Co. No. 1 A. H. Yakel, NW NE SW Section 6-6n-3e, Cypress 1,520 ft., with pay sand 1,545-65 ft., 10-qt. shot, pumped 60 bbl. in 3 hours.

Marion County

In Marion County, the Tonti area, A. Harvey No. 2-A Kagey Trustee, SE SE SE Section 33-3n-2e, perforated 7-in. casing 2,121-25 ft., 2,131-41 ft., and 2,171-76 ft., pumped 175 bbl. oil and 40 bbl. of water.

In the Salem field. Texas Co. No. 10 S. Parker, SW NE NE Section 33-2n-2e, Benoist 1,825-66 ft., 20-qt. shot, pumped 30 bbl. in 3 hours.

Texas Co. No. 7 F. Miller, SE NE SE Section 32-2n-2e, Benoist 1,779 ft., Renard 1,830 ft. Total depth 1,834 ft., flowed 37 bbl. in 3 hours. Texas Co. No. 8 O. Telford, NE SE NE Section 29-2n-2e, McClosky pay 1,951-70 ft., 1,989-2,001 ft., and 2,005-08 ft., swabbed 375 bbl. in 3 hours. Texas Co. No. 11 A. McCollum, NW SE SE Section 29-2n-2e, McClosky pays 1,940-47 ft., 1,951-91 ft., 1,974-76 ft., 2,010-16 ft., flowed 115 bbl. in 3 hours. Texas Co. No. 3 Frederick A, SE NW NW Section 29-2n-2e, Aux Vases 1,808-94 ft., flowed 16 bbl. in 3 hours.

Paul Rossi No. 5 Brooks, SW NE SW Section 29-2n-2e, Aux Vases 1,784-1,860 ft., 70-qt. shot, flowed 600 bbl. W. C. McBride, Inc., No. 12 N. L. Lee, SW NE SE Section 29-2n-2e, McClosky pays 1,934-60 ft., 1,970-89 ft., 1,995-2,020 ft., 2,036-42 ft., flowed 1,123 bbl. in 12 hours through casing and tubing, acidized with 6,000 gal., flowed 1,221 bbl. in 13 hours through casing and tubing. W. C. McBride No. 11 N. L. Lee, NW NW SE Section 29-2n-2e, Aux Vases 1,771-1,838 ft., 120-qt. shot, pumped 425 bbl. in 9½ hours.

Magnolia Petroleum Co. No. 9 J. R. Young, NE SW NE Section 29-2n-2e, McClosky 1,938-2,055 ft., flowed 1,020 bbl. in 6 hours. Texas Co. No. 14 J. Chapman, NE NW SW Section 28-2n-2e, McClosky pays 1,979-95 ft., 2,008-17 ft., 2,035-55 ft., flowed 89 bbl. in 3 hours.

Smith & Pekros No. 1 C. Hester, SW NW NW Section 22-2n-2e, McClosky 2,103-10 ft., pumped 144 bbl.

Texas Co. No. 16 N. Young, SW SE NE Section 20-2n-2e, McClosky pays 1,945-70 ft. and 2,023-34 ft., acidized with 2,000 gal., flowed 30 bbl. in 3 hours. Shell Oil Co., Inc., No. 7-A Salem State Bank, SW NW SE Section 20-2n-2e, McClosky 1,939-62 ft., total depth 2,061 ft., flowed 42 bbl. in 4 hours, acidized with 2,000 gal., flowed 800 bbl.

Kingwood Oil Co. No. 15 Shanafelt A, SE NE NE Section 20-2n-2e, Benoist 1,765-1,835 ft., total depth 1,880 ft., 70-qt. shot, flowed 760 bbl.

Magnolia Petroleum Co. No. 7 C. D. Phillips, NW SW NE Section 16-2n-2e, McClosky 2,032-2,100 ft., acidized with 3,000 gal., flowed 407 bbl. Ray No. 1 F. Shanafelt, SW SE SW Section 9-2n-2e, McClosky 2,112-22 ft., perforated 21 holes at 2,112-18 ft., acidized with 1,000 gal., pumped 74 bbl.

W. C. McBride, Inc., No. 7 Fyke Heirs, NW SW SE Section 5-1n-2e, Aux Vases 1,804-54 ft., 20-qt. shot, pumped 54 bbl. in 8 hours.

Lee No. 1 Mt. Moriah Church, SW SE SW Section 10-1n-2e, had show of oil in McClosky 2,129-32 ft. and 2,147-52 ft. but was not a producer and was abandoned at 2,155 ft.

Texas Co. No. 9 George Pittenger, NE NE NE Section 5-1n-2e, was a first report and a completion; Benoist 1,763-1,813 ft., flowed 16 bbl. in 3 hours.

In Clinton County, Elmer Goldschmidt, No. 1 Burger,

NE NE NW Section 12-2n-4w, abandoned in the lower Mississippian at 1,302 ft. with the hole full of water.

In Clay County, Pure Oil Co. No. 5 Leon Clark, C W½ NE SW Section 8-2n-8e, an old well plugged back from 3,183 ft., pumped 100 bbl. of oil with no show of water from Cypress sand. Wiser Oil Co. No. 3 Daly, C NE SW Section 6-2n-8e, perforated 3,051-75 ft., flowed 1,128 bbl. Pure Oil Co. No. 3 Sal Smith B, C W½ SE NE Section 7-2n-8e, Fredonia 2,995 ft., pay 2,995 to 3,085 ft., flowed 1,046 bbl. through tubing. Pure Oil Co. No. 4 Sal Smith B, CWL NE SE Section 7-2n-8e, Fredonia 2,989 ft., total depth 3,018 ft., flowed 1,029 bbl. Wiser Oil Co. No. 6 Damon Smith, SW SW NE Section 28-3n-8e, old well drilled deeper, old total depth 2,990 ft., drilled to 3,100 ft., pumped 14½ bbl.

In Wayne County, Pure Oil Co. No. 1 George Hubble, C E½ NW NE Section 9-1n-8e, McClosky pays 3,042 to 3,089 ft., acidized with 5,000 gal., pumped 144 bbl. oil and 133 bbl. water. Carl Robinson No. 3 Oakley, SE NE NE Section 34-2s-8e, McClosky pay 3,415-23 ft., acidized with 1,000 gal., flowed 720 bbl. New Penn Development Co. No. 1 C. A. French, NW NW NW Section 14-2s-9e, Fredonia at 3,321 ft., drill-stem test at 3,308-23 ft. recovered 1,000 ft. of mud, abandoned at 3,437½ ft.

In Wabash County, R. S. Hays and Phillips No. 1 A. and B. Schultz, SE NW SW Section 7-3s-13w, McClosky 2,873 ft., total depth 2,881 ft., acidized with 1,500 gal., pumped 160 bbl. in 12 hours.

In White County, Anding & Nation No. 1 Belva McIntosh, C SE SW Section 31-3s-8e, McClosky 3,363 ft., St. Louis 3,395 ft., total depth 3,405 ft.; acidized McClosky with 1,000 gal., pumped 76 bbl. with 5 per cent water showing. Sun Oil Co. No. 1 C. W. Ford, NW NE NE Section 18-5s-14w, McClosky 2,998-3,008 ft., acidized with 3,000 gal., pumped 20 bbl. oil and 25 bbl. water in 16 hours. Angle & Angle and Eason Oil Co. No. 1 Storms Heirs, C W½ SE SW Section 14-6s-9e, pay in Fredonia 2,980-90 ft., St. Louis 3,070 ft. and total depth 3,089 ft. Removable pipe had been set opposite the Waltersburg sand 2,210-44 ft. and the Cypress 2,268-80 ft. While testing the McClosky, gas broke through the removable pipe opposite the Waltersburg. Gas was killed and cement retainer run at 2,164 ft. Well completed at 2,219-44 ft. in the Waltersburg for an initial volume of 12,000,000 cu. ft. of gas with 985-lb. rock pressure.

In Franklin County, Palacine and others No. 1 Old Ben Coal Co., NW NE NE Section 4-5s-2e, was abandoned at 3,097 ft. The well had a slight show of oil in the Aux Vases at 2,731 ft.

In Perry County, G. H. Blankenship No. 1 B. Rheinecker, NW NW NE Section 3-6s-4w, abandoned at 1,318 ft. after topping Benoist 1,318 ft.

In Richland County, Pure Oil Co. No. 4 William Southgate, NW SW NE Section 23-4n-9e, upper Weller 2,598-2,604 ft., shot with 45 qt., pumped 238 bbl. Kitchen & Wilson No. 1 R. E. Wilson, SE SE SE Section 13-3n-9e, was abandoned at 3,094 ft. after getting the Fredonia at 3,037 ft. and running an electrical formation tester.

In Jasper County, Thompson Drilling Co. abandoned No. 1 Union Central Life Insurance Co., SE SE SW Section 14-8n-10e, at a total depth of 2,500 ft. without a show of oil. Benoist was topped 2,259 ft., Aux Vases 2,300 ft. and Fredonia 2,427 ft.

Wildcat First Reports

In Shelby County, Elmer Baseke and others No. 1 Unnamed, NE NE NE Section 15-9n-6e, moving in rotary tools.

In Crawford County, Kingwood Oil Co. No. 1 Walker, SE NE SE Section 23-7n-11w, had rig up for rotary tools.

In Effingham County, Frank Searight No. 1 Frank Wilson, NE NW SE Section 31-6n-5e, had rig up for rotary test.

In Madison County, Lakeview Oil Co. No. 1 Kaseberg, SW SE SE Section 21-3n-9w, set 122 ft. 10-in. casing and was drilling at 180 ft.

In Richland County, Leathers and others No. 1 Ray Malone, 100 ft. N and 500 ft. W NE¼ Section 21-3n-14w, had rotary derrick up.

In St. Clair County, Matches & Leach No. 1 Bear, SE NW SW Section 23-2n-6w, spudded in with rotary.

In Wabash County, Oil Exploration Co. No. 1 Fred Basecker, NE SE NW Section 13-2s-14w, a rotary location.

In Washington County, Armer and others No. 1 Neudecker, 576 ft. S and 330 ft. E NE¼ Section 33-3s-1w, rigging up rotary tools.

In Wayne County, New Penn Oil Co. No. 1 D. E. Pruiett, SW SE NE Section 7-2s-9e, a rotary location.

In Edwards County, Kingwood Oil Co. No. 1 Johnson, 2,310 ft. N and 330 ft. E Section 18-3s-11e, rigging up rotary tools.

In Perry County, W. R. Hayes and others No. 1 H. and F. Collins, SE SE SW Section 4-4s-1w, shut down rotary tools at 1,275 ft.

In White County, Sun Oil Co. No. 1 Henry J. Garner, 1,775 ft. W and 250 ft. S SW¼ Section 1-5s-10e, rotary derrick up.

In Schuyler County, D. K. Reed No. 1 J. P. Long, 250 ft. E and 250 ft. S SE¼ Section 28-1n-2w, spudded with cable tools 120 ft.

In Clinton County, J. J. Lynn and others No. 1 Western Catholic Association, SW SW NE Section 4-1s-5w, moving in standard tools.

OHIO FIELDS

NEWARK, Ohio, July 17.—Ohio fields covered by this report yielded 13 completions last week, including 9 gas wells, 3 oil wells and 1 dry hole. Two of the gas wells have open flows of better than 3,000,000 cu. ft. The oil producers were all completed in the shallow sands. The Mayfield Village test in Cuyahoga County is showing a small amount of gas in the Clinton sand.

Athens County, Canaan Township, Spearing Oil & Gas Co. No. 2 Lonnie T. Morrison, Section 12, made 75,000 cu. ft. of gas from the second Cow Run sand; total depth, 725 ft.

Fairfield County, Berne Township, City Natural Gas Works No. 1 W. H. Stimel, Section 6, has an open flow of 200,000 cu. ft. of gas from the Clinton sand at 2,140-64 ft.

Licking County, two Clinton sand gas wells were completed northeast of Newark. Madison Township, G. Shrider and others No. 1 Guy Hughes, Section 13, gaged 120,000 cu. ft. of gas open flow from sand at 2,660-93 ft. Mary Ann Township, Allen Willey and others No. 1 T. B. Hust, Section 25, is good for an open flow of 591,000 cu. ft. from sand at 2,606-39 ft.

Medina County, Chatham Township, Preston Oil Co. No. 4 Glenn Garver, Lot 5, Tract 16, made 22 bbl. of oil the first 24 hours after a shot in Berea sand, total depth 411 ft. Chatham Township, Swan & McDevitt, Lot 22, Tract 16, had a production of 12 bbl. of oil the first 24 hours after a shot in Berea sand at 347-88 ft. Spencer Township, East Ohio Gas Co. No. 1 H. C. Hange, Section 10, is a gas well in the Clinton, gaging 1,770,000 cu. ft. open flow; sand at 2,476-89 ft.

Gas Producing Co. completed a 3,500,000 cu. ft. gasser in Clinton sand in Harrison Township, Muskingum County, on the Henry Hass farm, Section 18; sand at 4,043-78 ft.

Monroe County, Sunsbury Township, H. B. Walker Co. No. 1 Lewis Shriver, Section 27, had 75,000 cu. ft. of gas in Berea sand at 2,214-20 ft.

Noble County, in Yoker Valley field, Wayne Township, Harry Clymer and others No. 1 Charles Wyskiver. Section 32, gaged 3,050,000 cu. ft. of gas from Berea sand at 1,465-74 ft. John Bindas No. 1 Samuel Trakes, Section 19, found Berea sand missing; total depth, 1,531 ft.

Summit County, Green Township, Obermiller Bros., Section 26, made 180,000 cu. ft. of gas from the Clinton sand; total depth, 4,464 ft.

The Clinton sand test in Mayfield Village, Cuyahoga County, being drilled by Benedum Trees on the J. V. Whitbeck Lot 33, showed 60,000 cu. ft. of gas in the first streak of Clinton sand at 3,268-3,310 ft.; second streak at 3,322-29 ft. was dry; still drilling.

There was no appreciable change in the deep tests in northwestern Ohio.

INDIANA

EVANSVILLE, Ind., July 17.—Substantial production was obtained from new wells in Posey and Gibson County in the past week. One well in Gibson County flowed for 30 minutes into pits at the rate of 4,800 bbl. per day. It was shut in until tankage is erected.

Following were the completions and near completions recorded:

In Posey County Illind Oil Co. No. 2 Stroud, SE NE SE Section 1-7s-12w, pumped at the rate of 500 bbl. per day from pays at 1,741-68 ft. and 1,854-78 ft., total depth. It was prorated to 150 bbl. per day. Superior Oil Co. No. 2 New Harmony Realty Co., NE SE SE Section 9-5s-14w, flowed 362 bbl. per day from Waltersburg sand at 2,176-2,204 ft.

In Vanderburgh County, Zephyr Drilling Co. No. 1 Evansville, NW NW SE Section 14-6s-11w, was dry and abandoned at 2,648 ft.

In Pike County, Luther Silby No. 1 Sargius, SE SE SE Section 14-1n-7w, an old well deepened from 639 ft. to 775 ft. was dry and abandoned.

In Gibson County, Continental Oil Co. No. 1 Bozeman Land Co., NW SW NW Section 24-3s-14w, had Cypress sand at 2,490-2,540 ft. and flowed 100 bbl. the first 30 minutes into pits. It was shut down until tanks are built. Lewis Production Co. No. 2 Cooper, SW NE SE Section 13-3s-14w, was shot with 20 qt. at 2,499-2,513 ft. and flowed 10 bbl. of oil in 30 minutes while being cleaned out. Continental Oil Co. No. 2 Cooper, NW SW SE Section 12-3s-14w, sand at 2,498-2,510 ft., total depth 3,185 ft., pumped 18 bbl. in 9 hours, but was not yet a completion. J. B. Bond and others No. 1 Dunn, NW cor. NE Section 19-3s-13w, was dry and abandoned at 2,955 ft. Ste. Genevieve lime was topped at 2,886 ft. A. J. Walker and others No. 1 Schmidt, C SE SW Section 13-3s-9w, had sand at 940-65 ft. It pumped 68 bbl. of oil and some water in 19 hours. Michel & Nelson No. 1 Putnam, NE NW NW Section 25-1s-12w, was shut down for orders. It found sulfur water at 2,405 ft. Fredonia lime was topped at 2,263 ft.

WESTERN KENTUCKY

OWENSBORO, Ky., July 17.—Two miles south of Beech Grove, in McLean County, Mocarz Oil Co. appears to have discovered a McClosky lime pool, the company's No. 1 Ed Traylor having penetrated 5 ft. of saturated lime at a total depth of 1,238 ft. Casing was to be set, after which the lime well will be acidized. The Birk City pool, in Henderson County, shows a 400-bbl. well in McClosky lime.

Following were the week's completions and new operations in western Kentucky:

Breckinridge County, Cabot district: McDonough & Co. No. 1 Noel Mason (F. Mathews-Min.), dry hole, total depth 269 ft., may drill deeper. Glen Dean district: D. C. Colbeck No. 5 Joe Moorman, on location, McClosky test in a Barlow sand pool.

Butler County, 3 miles southeast of Silver City: M. P. Evans and Cumberland Petroleum Co. No. 1 Floyd Givens, dry hole, total depth 454 ft. Harreldsville district: Hughes & Powers No. 1 E. E. Brown, dry hole, total depth 2,080 ft. Rochester district: H. A. Henry and others No. 6 Kyle Willis, 10-bbl. well, Jett sand, total depth 882 ft.

Christian County, 4 miles east of Crofton: Keith A. Spitznagle No. 1 W. A. Bowles, shut down at 175 ft., moving in heavier machinery. Two miles south of Apex: Shadoan & Wilson No. 1 McDonald, spudding in. Apex district: Frank Wilson and others No. 1 Jordan, location.

Daviess County, Cane Run School district: Cane Run Petroleum Co. No. 6 Rollie Ambrose, east tract, dry hole through McClosky lime, total depth 1,176 ft. Fred E. Hupp and others No. 7 A. Bratcher, 20-bbl. well, Jett sand, total depth 686 ft. Cane Run Petroleum Co. No. 12 R. E. Jackson, moving in. Mecca Oil Co. No. 1 Zula Johnson (old well drilled deeper), dry hole through McClosky, total depth 1,299 ft. Birk City district: Major Oil Co. and Palmer Drilling Co. No. 6 Brown (Prudential Insurance Co. tract), estimated 400-bbl. well in McClosky lime, flowing. No. 7, spudding in. W. E. Hupp and others No. 1 W. M. Gregory, drilling at 1,350 ft. Red Hill district: Fred Hupp and others No. 7 Homer Cossler, moving in for McClosky test in Jett-sand pool. Habit district: Lion Oil & Refining Co. No. 5 W. H. Foster, location for McClosky test in a stray-sand pool. Two and one-half miles north of Maceo: Hart & Hart No. 1 William Nantz, McClosky lime, dry, total depth 1,336 ft.; will plug back to 804 ft. and make a 25-bbl. Jett-sand well. Utica district: C. E. Daugherty and others No. 7 Rex O'Flynn, moving in. Shorts Station: Fenwell Drilling Co. No. 2 J. H. Sloane, rigging up. Pleasant Ridge district: F. F. Gibson and others No. 3 Dode Taylor, shut down at 350 ft. Thruston district: Gulf Oil Co. No. 1 G. W. Thompson, abandoned location.

Hancock County, 3 miles north of Maceo: Jack Cox No. 1 L. R. Waitman Estate, 30-bbl. well in Jackson sand, 875-907 ft., total depth 907 ft. Chambers district: William Flesher No. 2 Cal Young, spudding in.

Henderson County, Euterpe district: Imperial Oil & Gas Products Co. No. 1 Sam Bunch, location. Reed district: Snowden & McSweeney and others No. 1 William Chase, abandoned location. Spottsville district: Ralston & Sales No. 1 Annie Stewart, tools stuck in the hole, well abandoned, total depth 2,045 ft., skidding rig and starting new hole.

Hopkins County, 1 mile east of Morton Gap: Jess Ashby and others No. 1 John Paige, drilling at 600 ft.

Logan County, 2 miles north of Walnut Grove School:

(Continued on Page 72)

Kansas Developments

By DAL DALRYMPLE

Wildcats Started in Kansas Sector of Forest City Basin

Wildcat exploration in the Kansas sector of the Forest City basin, delayed while numerous tests were being started on the Missouri side of the basin, was extended the past week with the announcement of four new wildcats in as many northeastern counties. Drilling previously had been started at tests in two other northeastern counties.

H. O. Tudor and F. O. Haun No. 1 Ernst, NW NW SW Section 6-18-16, near Holton in Jackson County, was one of the new wildcats. This is the first wildcat to be started in that county since the Forest City basin lease boom began last year. A 95-ft. rotary derrick has been erected. Fred Lanahan, Salina, has the contract.

Continental Oil Co., Earl F. Wakefield and Glimac Oil Co. No. 1 Berridge, NW NW SW Section 8-9-17, is location for the first wildcat to be started in Jefferson County since the basin activity began. It is north of the village of Rock Creek.

H. B. Snyder and others No. 1 Feeler, SW SW NW Section 27-15-20, in Franklin County, on the far south rim of the basin, was rigging up machine. It is south of an old shallow pool in southern Douglas County and southwest of new Gardner pool, recently opened in Johnson County.

Sagamore Oil & Gas Co. No. 1 Smith, C W½ SE SE Section 16-14-22, outpost near the new Gardner area in Johnson County, had spudded.

Start Douglas County Test

Three Star Oil Co. No. 1 Griffin, C NW SE Section 4-14-18, southwest of Lawrence in western Douglas County, was spudded July 12 in the presence of a large crowd of spectators. This well was started largely as a result of the activity of John Holmes of Lawrence, secretary of the Northeast Kansas Oil and Gas Development Association. He assisted in leasing and assembling lease blocks sufficiently large to justify a deep test, and interested a group of Tulsa oil men who organized the Three Star company.

The other active wildcat in northeastern Kansas, Earl Wakefield and others No. 1 National, C NW NE Section 17-6-20, southwest of Atchison in Atchison County, was spudded June 30 and was drilling below 750 ft. The Byram-Jackson-Blair Co. of Atchison is interested in the wildcat.

Five rigs were reported running in the Gardner pool, Johnson County, where Squirrel and Bartlesville sand production has been found.

Discoveries of new productive areas and extension of proven fields was reported in several areas last week, as has been the custom in Kansas nearly every week.

Discovery of an oil area in Rice County was reported at E. J. Shaffer and others No. 1 Bauer, C W½ SW SW Section 23-21-7w, 1¼ miles southeast of the Wherry field, nearest production. Oil rose 3,200 ft. in the hole after the crew drilled plug in 7-in. casing to 3,401 ft. Oil was from conglomerate topped at 3,392 ft. Operators were preparing for a pumping test. C. L. Carlock and F. A. Ocker are interested in the wildcat.

Complete Cowley Discovery

W. L. Hartman, Harvey Blair & Arthur Brewer No. 1-A Brown, SE SE NW Section 33-30-4, discovery well in Cowley County, was completed for initial potential of 612 bbl. of oil daily. It topped Arbuckle lime at 3,279 ft. and was bottomed in that formation at 3,280 ft. It is 2 miles west of the David pool and 4 miles north of the Hittle pool, where Kansas' biggest producers of the year have been drilled. Gulf Oil Co. was reported drilling below surface casing at No. 1 Raymond, NE SW Section 33-30-4, an offset to the discovery.

Extension of the Prusa pool, Barton County, ½ mile to the southeast, was indicated at Howard Brunson and others No. 1 Esfeld, NW NW SE Section 28-16-11w. It found Arbuckle lime at 3,337 ft., total depth 3,345 ft., oil rose 1,800 ft. in the hole in 1 hour and later slopped over. Tubing was being run preparatory to testing. Armer & Vernon Oil & Gas Co. No. 1 Hoffman, NW NW SW Section 18-16-11w, wildcat 1 mile northwest of the Prusa pool, was to acidize for completion test after setting 7-in. casing. It topped Lansing lime at 3,035 ft., had pay at 3,207-14 ft., total depth 3,216 ft., and after first acid treament swabbed 10 bbl. of 40-gravity oil an hour.

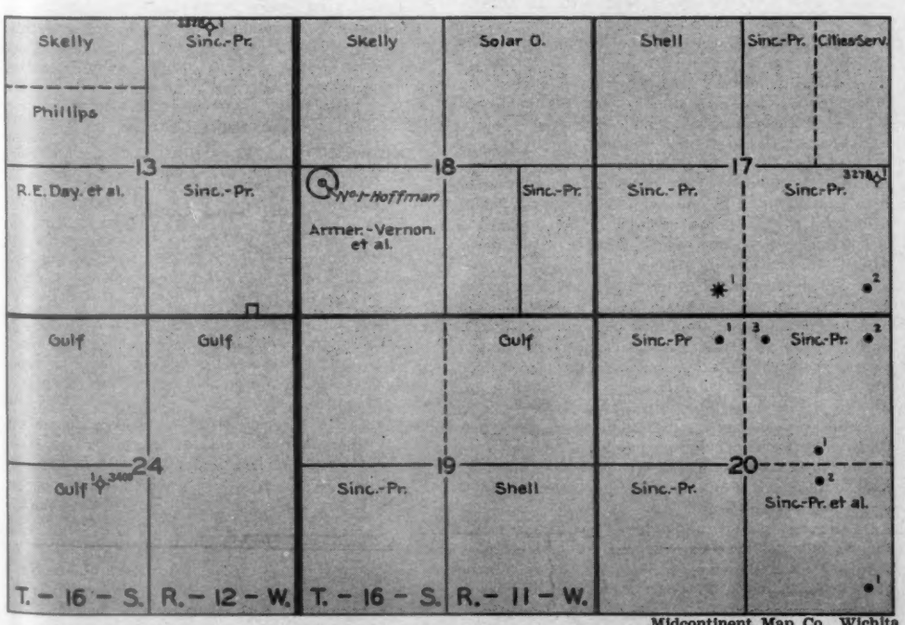
Indications were that the new Mueller pool in Stafford County would be extended ¾ mile northwestward at Virginia Drilling Co. and others No. 1 Tieperman, NE NE SW Section 29-21-12w, about 6 miles north of Hudson. It topped Arbuckle lime at 3,610 ft. and found saturation in a core to 3,617 ft., total depth. Seven-inch casing was set on top of the lime. It was to be standardized and drilled in.

South Sittner Extended

Another Stafford County extension was reported at Stanolind Oil & Gas Co. No. 2 Sittner, NE SW SW Section 3-22-12w, ¾ mile southwest of the South Sittner pool. It made daily potential of 399 bbl. of oil after acidizing Arbuckle lime topped at 3,629 ft., total depth 3,635 ft. It is the third producer in the pool.

Skelly Oil Co. No. 1 A. Bernstorf, CSL SE SE Section 22-19-10w, ½ mile north of nearest production in the Silica field, Rice County, gave promise of being a producer in Arbuckle lime topped at 3,282 ft. Saturation was found in drill cuttings to 3,286 ft., total depth. Seven-inch casing was set at 3,283 ft. and standard tools were being rigged up for completion. Three-eighths mile northwest of the extensioner Skelly Oil Co. No. 1 Lydia Bernstorf, CSL NW SE Section 22, was a location.

George W. Hinkle and Phil-Han Oil Co. No. 1 Peterson, NW SW NW Section 4-20-9w, Rice County, made 24-hour potential of 448 bbl. of oil from Arbuckle lime at 3,242 ft., total depth. It is ½ mile north of the Midway pool, about the same distance southwest of nearest production in the Campbell pool and may be the connecting link between the two pools. It also is about the same distance east of the Chase field and may be classed as an extension of that area.



Midcontinent Map Co., Wichita

Armer & Vernon No. 1 Hoffman, Section 18-16-11w, 1 mile northwest of the Prusa pool, apparently has opened a new Lansing lime pool in Barton County

Estimated Daily Production

Estimated daily production for Kansas for the week ending July 15, and for the preceding week was as follows.

	Barrels	
	July 15	July 8
Oxford City	925	850
Burrton	10,325	9,900
Ritz-Canton	5,125	5,550
Graber	2,750	2,200
Hollow-Nikkel	2,425	2,600
Lerado	625	1,075
Voshell	1,650	1,550
Wellington	2,175	1,950
Ellsworth County:		
Lorraine	1,400	1,450
Other pools	1,840	945
Rice-Barton counties:		
Bloomer	1,950	2,400
Chase	4,975	3,750
Geneseo	3,450	3,175
Raymond	775	575
Silica	10,700	10,550
South Silica	2,075	1,600
Keesling	800	700
Wherry	3,525	2,150
Miscellaneous Rice	6,310	8,110
Miscellaneous Barton	10,120	10,835
Russell County	24,325	25,600
Sedgwick County	3,500	3,425
Ellis:		
Bemis	6,800	6,575
Miscellaneous	3,505	3,660
Kingman County	635	530
Stafford County	5,850	6,360
Greenwood County	9,100	9,200
Butler County	17,125	17,625
Other fields	21,990	22,710
Total Kansas	166,750	167,600

Clawson Output Has Show

Frank Hollow & Bridgeport Machine Co. No. 1 Schartz, CSL SE NW Section 18-20-11w, may extend the Clawson pool in Barton County ½ mile westward. It found Arbuckle lime at 3,311 ft. and found satura-

(Continued on Page 84)

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Rains Retard Work in Texas; Activity in Louisiana Grows

HOUSTON, Tex., July 17.—With heavy rains retarding operations in the Texas Coast, interest shifted to Louisiana which is witnessing its greatest activity. While University, Eola and the Golden Meadows lead in operations, drilling activity has been general, showing an increase each week.

Prospects of opening production on the Vermilion Bay salt dome, Iberia Parish, were encouraging as Texas Co. is cementing 7-in. casing in No. 3-B State-Vermilion Bay, Township 16s-5e. The hole is bottomed at 10,241 ft., with sand and shale showing oil logged from 10,131-10,239 ft. This is the third deep test on the flank of the structure. The company's first test, No. 1-B State, was abandoned at 10,622 ft., while No. 2-B, generally considered as the discovery well, was quit at 9,101 ft. due to mechanical trouble from a blowout.

J. Perry Scranton No. 2 Martinez, a wildcat in Section 132-15s-17e, La Fourche Parish, has attracted attention as 7-in. casng was cemented on bottom at 9,003 ft., aften an electrical survey showed favorable indications. The section was logged as sand and shale at 8,655-89 ft., and the electrical survey showed 5 ohms resistivity on fourth curve and 10 ohms resistivity on the third curve. Sidewall cores showed the section to be fine sand with thin streaks of shale having a good showing of oil. The hole is expected to be carried deeper.

Sparta-Wilcox Trend

Wildcatting along the Sparta-Wilcox trend is expected to be slowed to some extent as one deep test was abandoned, and another loomed as a dry hole as a series of production tests proved disappointing. The abandoned hole is Continental Oil Co. and others No. 1 Mrs. Lillie Manuel, Section 33-4s-1w, Evangeline Parish, abandoned at 11,341 ft. after two production tests at 9,852-65 ft. and 9,885-9,902 ft. showed nothing but mud. In the Merryville area, Beauregard Parish, Atlantic Refining Co. No. 1-A Rice Land & Lumber Co. Section 22-3s-11w, is shut down waiting orders after a series of tests showed salt water. The well was tested at 8,240-50 ft., 8,183-92 ft., 7,720-40 ft. and 7,585-7,600 ft. The latter section was considered as most promising, as a 20-ft. section was logged as distillate.

East of Latainer, Avoyelles Parish, location for a Wilcox test was made by C. B. Bunte for No. 1 Hines Tie & Timber Co., in Section 24-3n-2e. It will be spudded this week. The only other advanced Wilcox test is W. T. Burton No. 1 fee, Vernon Parish, drilling in shale below 7,585 ft.

Eola

In the Eola field, Avoyelles Parish, Amerada Petroleum Corp. is preparing to make a production test of No. 1 Robert Irion, a west outpost in Section 6-2s-3e. The hole is bottomed at 8,684 ft., and 5½-in. casing was cemented at 8,601 ft. This is the highest well in the field, having topped the Wilcox at 8,337 ft. On the northeast side of production in Section 5, the company's No. 1 Avoyelles Trust & Savings Bank, topped the Wilcox at 8,522 ft., and casing is being cemented on bottom at 8,580 ft.

Production from a new sand was opened at the Abbeville field, Vermilion Parish, with completion of Continental Oil Co. No. 1 Duhon, Section 17-12s-3e. Casing was perforated at 10,505-26 ft., and it flowed 139 bbl. of distillate through a 5/32-in. choke.

In the Bancroft field, Beauregard Parish, Republic Production Co. No. 7 Lutcher-Moore Lumber Co., north of production in Section 14-6s-13w, perforated casing at 7,639-41 ft., and tubing is being run for completion after favorable indications on a drill-stem test. If productive the well will open production from a new sand as the regular pay is found at 7,300 ft.

Continental Oil Co. completed its second producer on the Convent dome, St. James Parish, with completion of No. 2 Realty Operators. Casing was perforated at 8,035-45 ft., and it flowed 204 bbl. daily through a 12/64-in. choke.

Golden Meadows

In the active Golden Meadows field, La Fourche Parish, two wells were testing new sands. Terouche Oil Co. No. 1 D. B. Cheramie, Section 12, is bottomed at 6,230 ft., and is being tested through perforated casing at 4,406-22 ft., This sand has been logged in two wells, but never tested. M. H. Marr and R. A. Bristol No. 1 Church is bottomed at 8,897 ft., and 7-in. casing was cemented at 6,012 ft., to test a sand section at 5,150-73 ft. Wm. Helis and Danciger Oil & Refining Co. No. 1 School Board is coring in sand and shells below 2,662 ft., after a drill-stem test at 2,639-57 ft., recovered 186 ft. of pipe-line oil and 10 ft. of oil and water. This sand has also been logged in other wells, but never tested. Derrick is up for M. H. Marr and G. H. Vaughn No. 1 Adams Terrebonne in Section 9, bringing active operations to 11.

Bel Oil Corp. No. 1 J. A. Bell, discovery well of the Bel field, Allen Parish, has been completed for an initial production of 20 bbl. of 55-gravity distillate, flowing through a 10/64-in. choke. It was completed several weeks ago at 7,272-92 ft., but due to mechanical trouble was not gaged.

The second well drilled on the Kenilworth structure, St. Bernard Parish, has been abandoned, as Vendome Petroleum Co. No. 2 Kenilworth Plantation, north of the discovery well was quit at 11,234 ft.

Location for two wildcats were made in southeastern Louisiana by Texas Co. On the Bastian Bay prospect, Plaquemines Parish No. 1 State-Bastian Bay was started 750 ft. north and 2,750 ft. east of the southwest corner of Section 43-20s-28e, in Bayou Fontanelle. In the Coon-Point area, Terrebonne Parish, No. 3 State-Coon Point is in Township 23s-14e.

Texas Coast

In Jackson County, Moore and Ahern No. 1 S. G. Drushel, Patrick Scott Survey, is shut down at 7,010 ft. Sand with a gas odor was logged at intervals from 4,200 to 5,700 ft., and a drill-stem test may be made. In the Francitas field, Crosby Drilling Co. No. 1 Hale and Alee, was abandoned at 8,804 ft. with only slight showing in the regular sand. Mills Bennett Production Co. No. 1 G. A. Lowrance was completed in a new sand at 8,575-8,640 ft., flowing 57 bbl. of distillate daily through a 5/32-in. choke. In the north extension area of West Ranch field, Lonnie Glasscock completed his second producer as No. 2 Drummond, flowed 131 bbl. daily through a 9/64-in. choke under a tubing pressure of 500 lb. and casing pressure 150 lb. Sand was cored at 5,534-47 ft., total depth.

In Matagorda County, west of Palacios, Sun Oil Co. No. 1 Cavallin, reported last week as flowing pipe-line oil while cleaning out from new perforations at 7,850-60 ft., went dead before it could clean itself, and two cement squeeze jobs below and above the original perforations were made in an attempt to recomplete the well as a commercial producer.

In the same county, in the Citrus Grove area, Continental Oil Co. No. 1 Savage has been completed for an initial production of 1,500,000 cu. ft. of dry gas flowing through a ¼-in. choke. It was completed through perforations at 4,132-42 ft.

On the west side of the Spurger field, Tyler County, Republic Production Co. No. 22 Hurd cored broken sand and shale showing oil in the discovery horizon at 7,643-54 ft., and at 7,701-64 ft., and is drilling below 7,800 ft.

Magnolia Petroleum Co. will attempt to extend the North Cheek field, Jefferson County, as location was made for No. 6 J. H. Phelan in the H.T.&B. Survey No. 1. The same company has also entered the newly opened South China field by staking location for No. 1 Broussard Trust, a west offset to the discovery well.

In Jasper County, C. B. Bune and others No. 1 Cartwright, E. O. LeGrande Survey, is drilling in shale below 5,960 ft. after topping the Cockfield at 4,383 ft. Salt water sand was cored at 4,413 ft.

Location for a 10,000-ft. test was made on the flank of the Hull field, Liberty County, by Gulf Oil Corp., No. 115 Phoenix Development Co., in the J. Defore Survey.

In Polk County, Jack Frazier and others No. 2 S. J. Bergman is drilling in the Wilcox below 7,180 ft. Top of the section was reported at approximately 6,897 ft., and the well is reported to be running higher than the operators' first test, a dry hole drilled about 1 mile northeast.

Location for a Frio sand test was made in Chambers County by J. R. Turnbull and others on the Wm. D. Shepherd lease in the R. A. Porter Survey. The well is being drilled on a farmout lease from Atlantic Refining Co.

In Liberty County, Stanolind Oil & Gas Co. No. 1 Flowers, discovery well of the Martha field, flowed 240 bbl. of 41-gravity on a 24-hour potential test flowing through a 5/32-in. choke. Tubing pressure was 1,400 lb. and shut-in casing pressure 1,580 lb. The well is flowing from the lower Yegua through perforated casing at 8,104-08 ft.

Location for another wildcat was made in Fort Bend County as C. B. McDaniel and others are moving in material to No. 1 Melaine Settegast in the E. P. Whitehead Survey. It will be carried to the Vicksburg, objective of several wildcats drilling in this county.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Mangawin Production Co. No. 2 Bassett Blakeley 2,774 ft., abandoned. Rowan Drilling Co. No. 1 Jamison, sand 1,952-86 ft., 81 bbl., ¼-in. choke, jetting. Hastings field: Stanolind Oil & Gas Co. No. 2-B Hiram Moore, sand 6,097-6,107 ft., 379 bbl., ¼-in. choke. Stanolind Oil & Gas Co. No. 15-C Hiram Moore, perforated casing 6,040-78 ft., 652 bbl., ¼-in. choke.

Chambers County

Barbers Hill field: Texas Gulf Producing Co. No. 1 Higgins, sand 4,804-97 ft., 426 bbl. ¼-in. choke.

Fort Bend County

Boling field: M. K. Culver No. 19 Belle, sand 327-44 ft., 51 bbl. pumping. Thompson field: H. M. Naylor No. 3 Musselman, sand 7,706-7,818 ft., 966 bbl., ¼-in. choke.

Galveston County

Dickinson field: Bennett Petroleum Corp. No. 2 Crocker, sand 8,690-8,751 ft., 433 bbl., 14/64-in. choke. Bennett Petroleum Corp. No. 4 R. C. Gray, 8,941 ft., 488 bbl., ¼-in. choke. Coast Petroleum Co. No. 15 Stewart, 8,707 ft., 666 bbl., ¼-in. choke. League City field: Phillips Petroleum Co. No. 1 Esperson, peforated casing 9,091-98 ft., 222 bbl., ⅛-in. choke. Phillips Petroleum Co. No. 2 Stewart Title Guaranty Co., perforated casing 8,669-8,704 ft., 218 bbl., ⅛-in. choke.

Harris County

Fairbanks field: R. A. Johnston and others No. 1 Sumner and others, sand 6,832-40 ft., 65 bbl., ⅛-in. choke. Friendswood field: Humble Oil & Refining Co. No. 8 West Production Co. sand 5,460-6,041 ft., 505 bbl., ¼-in. choke. Tomball field: Humble Oil & Refining

(Continued on Page 80)

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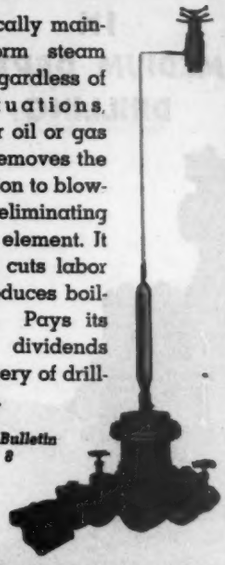

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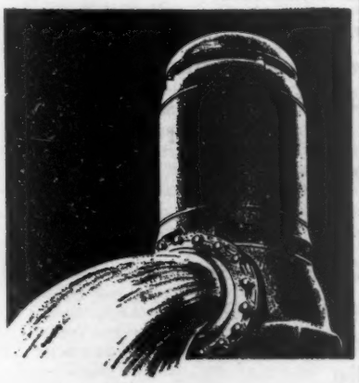

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PERFORMANCE WITH ECONOMY

Among the Drilling

GILLETTE & HOUSE of McCamey, Tex., has the drilling contract and has spudded to 80 ft. at the Dave Elder, Harve Nolen and George Adkins No. 1 J. H. DeLong, wildcat test in southern Tom Green County, West Texas, and 2½ miles north and slightly east of Christoval. The test is 330 ft. from the north and 1,680 ft. from the east line of Section 83, Block 1, James Webb Survey.

RATHKE OIL CO., Wichita Falls, Tex., drilling contractor and operator, has the contract and is rigging up material at a new outpost test for the Sewell pool of Young County, West Central Texas. The test is a half mile northwest of production and will be the Roy Westbrook, Stanley A. Thompson and W. L. Stewart No. 1 J. C. Vaughn, 510 ft. from the west line and 1,165 ft. from the east line of the southwest quarter of Section 3, T.&N.O. Survey, Abstract 1248. The test is contracted to 4,250 ft. However, the projected pay zone is expected to be found at about 3,950 ft.

BOSWORTH DRILLING CO., Odessa, Tex., has the contract for a new deep wildcat test in Nolan County, West Texas. It is contracted to 8,000 ft., one of the deepest drilled in the area, and is by Plymouth Oil Co. on a block of some 4,000 acres about 2 miles east of the town of Roscoe. Location is on the land of Mrs. F. M. McClure and is 990 ft. from the north and east lines of the northwest quarter of Section 49, Block 23, T.&P. Survey. The test is expected to explore the entire Pennsylvanian section and the upper members of the Ordovician.

GROOVER & ROSE, drilling contractors of Abilene, Tex., have been given the contract for a Palo Pinto lime test in the southeast corner of Haskell County, West Central Texas. Test will be P. S. Kendrick of Abilene No. 1 Hendrick ranch, in the northwest corner of Section 1, A.B.&M. Survey. The test is on the Palo Pinto trend which produces in the Griffin and Avoca pools of Jones County and the Ivy pool of Shackelford County.

JONES, STASNEY & BRYON, West Central Texas wildcatters of Albany, have staked location for a test on the Palo Pinto lime producing trend in Jones County and southwest of the town of Avoca in that county. It is No. 1 Jacob Muehlstein, 440 ft. west of CEL of NE¼ of Section 28, D.&D.A. Survey, 1 mile south and 2½ miles west of Avoca.

ALLEN & MORRIS have apparently opened a field in Nueces County, Southwest Texas, with Shield Oil Co. No. 1 Magee, a wildcat near the town of Robstown. The well is drilling below 6,100 ft. after a 15-minute drillstem test at 5,556-82 ft. recovered 360 ft. of fluid, of which 73 per cent was 42-gravity oil. Working pressure built up to 300 lb. The completion of the well for a good producer would result in an active drilling campaign, as numerous major and independent companies hold close-in protection acreage.

N. W. HUNTER has abandoned No. 1 Lanz, a wildcat in Chambers County, Texas, and the rig is being moved to San Jacinto County, where contracts for two wells were received from F. J. Hynes. The wildcats are on the Foster estate, and both wells will be drilled to the Wilcox formation. Another contract was received from C. B. McDaniel for No. 1 Settegast, 7,700-ft. wildcat test located north of Richmond in the E. P. Whitehead Survey.

GLENN McCARTHY is moving in a rotary to Anchor area, Brazoria County, Texas, for No. 1 J. C. Carr, a projected deep test. In the Chocolate Bayou area, No. 1 Houston Farm is drilling below 9,700 ft. In the League City field, Galveston County, four operations are reported for the Phillips Petroleum Co.

JACK FRAZIER has spudded O. J. Martin No. 1 Blakely, a deep wildcat test southwest of Clodine in Fort Bend County. In Polk County, No. 2 Bergman, a Wildcox test being drilled jointly with Sinclair Prairie Oil Co., is reaming at 7,200 ft.

BLOOD & HENDERSHOTT, Bangor, Mich., topped the Monroe lime at 1,186 ft. and were drilling at 1,350 ft. on their No. 1 Murray, NW NW NW Section 27-2s-16w, Bangor Township, Van Buren County, Michigan. The test was a failure in the Traverse, as it showed only a trace of oil.

AMERICAN DRILLING CO., Saginaw, Mich., has staked location and obtained permit for its No. 5 Ida B. Newcomer, C N½ NE SE Section 29-19n-6w, Redding Township, Clare County, Michigan.

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opened an office at 803 Hanselman Building, Kalamazoo, Mich. The firm is composed of J. A. Dalm, E. H. Pence, and Bob King.

THOMPSON DRILLING CO., Centralia, Ill., abandoned its No. 1 Union Central Life Insurance Co., SE SE SW Section 14-8n-10e, Jasper County, after getting the Benoist at 2,259 ft., Aux Vases at 2,300 ft., and the Fredonia lime at 2,427 ft., with no oil showing.

CLARK BROTHERS No. 1 Eureka School, SW SE SW Section 27-1s-7e, Wayne County, Illinois, was flowing by heads and being agitated by a swab when the casing collapsed 1,200 ft. off bottom. The well was shut down until the casing could be repaired.

KINGWOOD OIL CO., Effingham, Ill., reached a depth of 3,025 ft. on its No. 1 Tullis, C E½ NE NE Section 29-3s-8e, White County, Illinois, last week. No shows have been reported to date.

READING & BATES, Tulsa, have one rotary rig running for Atlantic Refining Co. in Section 21-7n-4e, Pottawatomie County, Oklahoma, and another for Shell Oil Co., Inc., in Winkler County, Tex.

MAX CONREY, Centralia, Ill., No. 1 Joint Stock Land Bank, SW SW NE Section 7-2s-4w, Washington County, Illinois, was shut down for orders after topping the Fredonia lime at 1,272 ft. and reaching a total depth of 1,295 ft.

PETRIE & McCRACKEN, Centralia, Ill., No. 1 Roper, NE NW SE Section 9-1s-1e, Jefferson County, Illinois, ran into difficulties at a total depth of 1,387 ft. when the drill pipe twisted off 13 joints off bottom. It took several days to get over the fish, but they were reported as drilling ahead late last week.

VORHEES DRILLING CO. No. 1 Cummings, outpost in the Walker field, Kent County, Michigan, increased its natural oil flow from 33 to 48 bbl. per hour when deepened from 1,865 to 1,867 ft. The gas also increased from 5,000,000 cu. ft. to an estimated 6,000,000 cu. ft.

ROBEY DRILLING CO., National Bank of Tulsa Building, Tulsa, is nearing completion depth of its contract on the Johnson Oil & Gas No. 1 Isom, a wildcat in Section 32-3s-1e, Jefferson County, Illinois. If the well is a failure in the McClosky, operators may decide to drill deeper.

MANNING & MARTIN, INC., Denver, Colo., has been given contract by Continental Oil Co. for a rotary test of the El Dorado structure, 18 miles northwest of Denver and 7 miles southeast of Boulder, Colo. Location is tentatively reported as in S½ Section 5-1s-69w. Drilling is to start on or before July 25, and will go to the Hygiene from 5,500 to 5,800 ft. with optional agreement to carry the well to the Dakota if the Hygiene is in place and suggests structure favorable for accumulation of oil and gas in the Dakota. The wildcat will be 8 miles southeast of the old Boulder field, discovered in 1902 and still producing oil from wells in the Hygiene.

One of Martin & Manning's rigs recently used in drilling Texas Co. No. 1 Dry Piney, a deep test in Sublette County, Wyoming

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Oklahoma Operations

By
DAL DALRYMPLE

Productive Limits of Cement Field Extended to Southwest

The Cement field in Caddo County, southwestern Oklahoma, was extended ¼ mile southwestward at B. E. Johnson and others No. 1 Plummer, NE NE SW Section 34-6-10w. It found sand at 3,345-67 ft., total depth, and swabbed 8 to 10 bbl. of oil an hour. Operators were to make potential test on swab and then put on pump. Same operators have made location for No. 2 Plummer, NW SE SW Section 34-6-10w, and three other offsets will be drilled on holdings of other companies.

Testing of Pure Oil Co. No. 1 Noble, C NE SE Section 35-3s-1e, wildcat discovery north of Ardmore in Carter County, was delayed by engine trouble, necessitating a shutdown for repairs. It swabbed from 125 to 135 bbl. of oil daily for several days after perforating pipe between 4,150-4,234 ft.

Shell Oil Co. No. 1 Ratliff, SE SE NE Section 19-7-17w, west offset to the discovery well in the Hobart pool, Kiowa County, was drilling below 1,115 ft. in lime after showing a slight increase in oil at 1,096-1,104 ft. Operators may acidize the lime.

Mid-Continent Petroleum Corp. and others No. 6 Brandon, NE NE NE Section 13-18-1e, northwest side of the Ramsey pool, Payne County, made potential of 7,344 bbl. of oil from Wilcox sand at 4,835-54 ft., total depth. Gas gaged 4,250,000 cu. ft. It flowed 323 bbl. of oil the first hour.

Wildcat Operations

A productive area was opened south of Konawa in southwestern Seminole County at Culver No. 1 Burton, SW NW SE Section 3-5-5. It topped Hunton lime at 2,515 ft., had sand at 2,660-68 ft., total depth, set 7-in. casing at 2,554 ft., and flowed 450 bbl. of oil in 24 hours, pinched.

Phillips Petroleum Co. No. 1 Hubacher, C NW NE Section 11-7-15, Pittsburg County, found Wilcox sand at 7,514 ft., nothing was showing at total depth of 7,731 ft., and it was dry and abandoned.

Klintworth No. 1 Bledsoe, SE NW NW Section 11-13-6, Lincoln County, had Prue sand at 2,920 ft., total depth 2,977 ft., and was dry and abandoned.

Beckett No. 1 Standefer, NE NE Section 25-7-18w, Kiowa County, was dry and abandoned at total depth of 1,225 ft. in Pontotoc series.

Mason No. 1 Lindsay, SW SE SE Section 26-12-3e, old wildcat in the Meeker area, Lincoln County, was to be plugged back from total depth of 5,560 ft. Seven-inch casing was set at 4,535 ft. and operators were waiting on cement to set.

Hall & Briscoe No. 1 Thompson, SW NE Section 28-13-1e, wildcat east of Jones in Oklahoma County, had spudded.

Brady No. 1 Sala, NW NE NW Section 33-13-6, wildcat east of Wilzetta in Lincoln County, had dug cellar and pits.

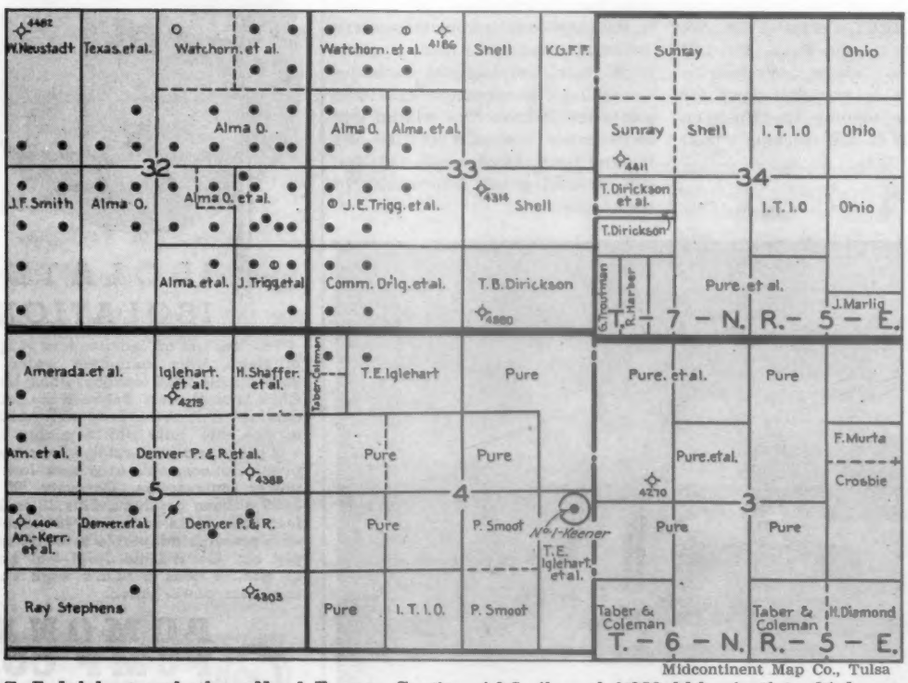
Marland Oil Co. No. 1 Crooks, SW SE Section 21-26-3e, wildcat east of Ponca City in Kay County, was a machine.

Lewis & Myers No. 1 Ford, NE SE Section 14-7-18w, wildcat west of the new Hobart pool in Kiowa County, was drilling below 175 ft.

Seminole County

Sunray Oil Co. No. 2 Kay, SW NW SE Section 12-6-5, Grayson area, Seminole County, topped dolomite at 3,729 ft., total depth 3,819 ft., was acidized and pumped 304 bbl. of oil in 24 hours.

Commercial Co. No. 5 Peters, SE NE NW Section 18-5-8, Allen district, an old well, was deepened from 2,704 ft. to Hunton lime at 3,862 ft., total depth 3,892 ft., was acidized and pumped 12 bbl. of oil daily.



Midcontinent Map Co., Tulsa

T. E. Iglehart and others No. 1 Keener, Section 4-6-5, flowed 1,650 bbl. of oil in 24 hours, extending the St. Louis pool, Pottawatomie County, eastward almost to the Seminole County line

Superior Oil Co. No. 1 Chippee, NW NE NW Section 13-6-5, had sand at 2,677 ft., total depth 3,000 ft., was shot and pumped 35 bbl. of oil and 5 bbl. of water daily. J. F. Smith No. 1 Norvell, NW SW NW Section 29-6-6, was an abandoned location.

Smith No. 2 Killingsworth, SE SW NE Section 28-7-6, was bottomed at 2,249 ft., plugged back to 2,227 ft., shot, and was dry and abandoned.

Dave Malernee No. 2 Mason, SE SW NE Section 33-7-6, Dora area, topped Earlsboro sand at 2,854 ft., total depth 2,982 ft., plugged back to 2,880 ft., was shot and pumped 25 bbl. of oil in 24 hours.

Same operator's No. 4-A Swan, NW NE SW Section 33-7-6, had a hole full of water and was abandoned at 942 ft., total depth.

McQueen No. 1 McCann, SE NE Section 33-7-6, found Senora lime at 2,470 ft., sand 2,825 ft., total depth 2,865 ft., was shot and flowed 110 bbl. of oil in 24 hours.

Shaffer No. 1 Owens, C N½ SE NE Section 18-8-6, topped Hunton lime at 4,169 ft., Sylvan shale 4,180 ft., total depth 4,182 ft., was acidized and pumped 54 bbl. of 43.6-gravity oil in 24 hours.

Ligon No. 1 McGisney, SW SE SE Section 24-8-7, found Cromwell sand at 3,314 ft., total depth 3,330 ft., plugged back to 3,321 ft., was shot and pumped 25 bbl. of oil in 24 hours.

Deaner No. 2 Wood, NE SE Section 33-7-6, had spudded.

Pottawatomie County

On the west side of the St. Louis district, Pottawatomie County, Black Gold Petroleum Co. completed No. 1 Terrell, C NW NW Section 14-7-3e, in Hunton lime at 4,303-48 ft., total depth. It was acidized and flowed 173 bbl. of oil in 24 hours, and 210 bbl. in the next 24 hours.

Kerlyn Oil Co. No. 1 Ward, C E½ SE SW Section 25-7-3e, topped Viola lime at 4,175 ft., Simpson dense 4,234 ft., dolomite 4,275 ft., total depth 4,336 ft., ripped casing, acidized and pumped 90 bbl. of oil and 50 bbl. of water in 24 hours.

Same company's No. 1 Schooliand, NW NE Section 36-7-3, found Viola lime at 4,220 ft., was bottomed at 4,243 ft., acidized and pumped 158 bbl. of oil and 10 bbl. of water daily.

Denver Oil & Refining Co. No. 3 Stearns, SE NW Section 6-6-5, topped dolomite at 4,105 ft., total depth 4,210 ft., plugged back to 4,181 ft. and pumped 35 bbl. of oil and 2,300 bbl. of water in 24 hours.

Johnson No. 1 Barthelmas, NW NE Section 8-6-5, was an abandoned location.

Oklahoma Oil Corp. No. 8 Smith, SW SE Section 25-7-4, had Wilcox sand at 4,320-24 ft., total depth, plugged back and ripped casing without result and was abandoned when the hole filled with water.

Atlantic Refining Co. No. 2 Spaugy, SE NW Section 6-6-4, Avoca area, topped dolomite at 4,330 ft., sandy dolomite 4,464 ft., total depth 4,610 ft., perforated casing at 4,220-73 ft., was acidized and swabbed 610 bbl. of oil in 20 hours.

R. Olsen Oil Co. No. 3 Gilles, NW NW NW Section 5-10-4, was reported making 15 bbl. of oil an hour after a shot with 60 qt. It is in the Shawnee pool.

T. E. Iglehart No. 1 Zoeller, SE NE Section 4-6-5, was a rig. Curtis No. 1 Townsend, NW SW SW Section 28-6-5, was a location, offsetting No. 1 Keener extension well. R. Olsen Oil Co. No. 4 Gilles, SE NW NW Section 5-10-4, was drilling below 2,600 ft.

Creek County

Dutcher sand topped at 2,691 ft. yielded 148 bbl. of oil in 24 hours at Gilpin No. 1 Macksand, SW NE Section 31-17-10, Kellyville district, Creek County. The well was completed at total depth of 2,720 ft.

ANNOUNCEMENT

IN ORDER to more fully serve our customers in the oil fields, the BAROID SALES DEPARTMENT wishes to announce the acquisition of the Drilling Mud business of the Geo. S. Mepham Corporation and C. K. Williams & Company of California.

This will enable us to offer to the trade, in addition to the products previously handled by this company, the products formerly handled by the above mentioned companies. These products include COLOX, JELOX and "CHEMICAL Z", and they may be obtained in the various oil fields from the same distributors by whom they have previously been handled.

BAROID SALES DEPARTMENT

NATIONAL PIGMENTS & CHEMICAL DIVISION OF
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McMahon No. 1 State Bank, SW SE NW Section 31-17-10, pumped 50 bbl. of oil in 24 hours after shooting at 2,736-50 ft. The hole was bottomed at 2,761 ft., and plugged back to 2,750 ft.

In the Mounds area, Anthony No. 3 Warsley, CEL SW SE Section 4-16-12, found Dutcher sand at 1,881-88 ft., total depth, and pumped 15 bbl. of oil daily.

Same operator's No. 5 Muskogee, SW NE Section 9-16-12, had a hole full of water and was abandoned at 2,085 ft., total depth.

Willoughby No. 1-B Hawkins, SW SW Section 31-18-10, found lime at 1,815-44 ft., total depth, was acidized and pumped 10 bbl. of oil in 8 hours.

A failure was recorded in the Mannford district at Turnbow No. 3 Coonrod, NE SE SE Section 3-19-9, an old well deepened from 2,016 ft. It found Bartlesville sand at 2,230-65 ft., total depth, and was dry and abandoned.

Darby Petroleum Corp. No. 1 Anthis, SW SE SW Section 19-19-9, was dry and abandoned in Wilcox sand at 3,100-16 ft., total depth.

Wilcox sand was found productive at Worley No. 1 fee, NE SW SE Section 34-14-10, East Tuskegee area. Sand was found at 3,282-94 ft., total depth, plugged back to 3,292 ft., and it flowed 100 bbl. of oil in 24 hours.

New work in Creek County: Sunray Oil Co. No. 1 Harris, SW NE Section 30-14-7, moving in rotary tools; Selby Oil & Gas Co. No. 1 Tecumseh, SE NE SW Section 36-16-7, machine; J. E. Crosbie, Inc., No. 1 Mosquito, SW NW NE Section 20-17-9, location; Bryan No. 1 Jacoby, NE SE NW Section 18-18-10, spudded.

Tulsa-Okmulgee-Muskogee

Sindorf and others No. 1 Lynn, SW NW Section 36-17-12, Tulsa County, was dry and abandoned at 752 ft., total depth. Towbridge No. 2 Reynolds, NW SE NE Section 7-18-14, an old well, was dry and abandoned after deepening from 965 ft. to 1,230 ft.

In Okmulgee County, Hendricks No. 12 Peavler, NE SW NW Section 35-15-14, was bottomed at 798 ft., was shot without result, and completed as a water disposal well.

In Muskogee County, Swick No. 2 Millison, NE SW NE Section 32-15-15, was dry and abandoned at 2,062 ft., total depth.

Wilcox sand found at 3,116-31 ft., total depth, in McAdams No. 1 Thompson, SW NW NW Section 29-15-11, Okmulgee County, produced only water and the well was abandoned.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending July 15, and for the preceding week was as follows.

	Barrels	
	July 15	July 8
Allen	7,025	7,175
Billings	6,550	6,600
Burbank	8,050	8,175
South Burbank	9,300	9,325
Balance Osage	18,150	18,175
Blackwell district	3,975	4,025
Bristow-Slick	7,725	7,875
Chandler	1,550	1,525
Crescent	3,125	3,175
Cromwell	3,150	3,175
Cushing-Shamrock	10,150	10,250
Duncan	4,225	4,375
Edmond	5,550	5,650
Fish	5,400	5,350
Fitts	22,875	26,350
Jesse	2,325	2,525
Graham-Fox	3,875	3,900
Gray	950	900
Healdton	9,100	9,125
Hewitt	3,975	3,950
Keokuk	3,575	3,625
Konawa	1,225	1,225
Lucien	9,275	9,550
Moore	2,775	2,825
Oklahoma City	102,025	103,900
Olympic	3,125	3,150
Ramsey	4,550	4,500
Sasakwa	1,350	1,375
Sholem-Alechem	2,775	2,850
Seminole district:		
Bowlegs	8,375	8,550
Carr City	2,925	2,950
Dora	3,500	3,525
Earlsboro	5,050	5,250
South Earlsboro	550	550
East Earlsboro	4,025	4,175
Little River	7,250	7,225
East Little River	800	775
Maud	750	725
Mission	1,525	1,550
Seminole	8,225	8,425
East Seminole	1,325	1,375
Searight	2,525	2,550
Total Seminole	46,825	47,625
St. Louis-Pearson	36,725	37,500
Tatums	2,100	2,050
Tonkawa-Garber-Thomas	4,225	4,250
Wewoka	2,200	2,225
Yale-Jennings	3,625	3,675
Other pools	92,000	92,500
Total Oklahoma	455,400	464,425

Lincoln County

Stanolind Oil & Gas Co. No. 2 Martinek, C W½ W½ SE Section 35-13-5, Wilzetta area, had Hunton lime at 4,257-64 ft., total depth, was acidized and flowed 652 bbl. of oil in 10 hours, cutting 25 per cent.

Indian States Oil Co. No. 1 Tippen, C SW NW Section 15-13-6, Laffoon area, found Wilcox sand at 4,271 ft., total depth 4,300 ft., was acidized and shot, and swabbed 680 bbl. of 23.6-gravity oil in 21 hours.

In the Sac and Fox pool, Jones No. 5 May, SE SW SE Section 10-14-6, had Prue sand at 2,924-97 ft., was bottomed at 3,004 ft., shot, and flowed 21 bbl. of oil in 24 hours.

Pontotoc County

Senora Oil & Gas Co. No. 1 Osborne, SW SE SW Section 8-5-5, Bebee area, Pontotoc County, topped Hunton lime at 2,187 ft., total depth 2,440 ft., had a hole full of water and was abandoned.

Patsy Oil Co. No. 3 Bates, SW NW SW Section 26-2n-7, Fitts district, an old well being deepened from 4,032 ft., was drilling below 4,371 ft.

Okfuskee County

Summitt Drilling Co. No. 1-A Steil, C N½ SW Section 18-10-11, Okfuskee County, was bottomed at 3,812 ft., plugged back to 2,980 ft., perforated casing at 2,944-60 ft., was acidized and produced 5,000,000 cu. ft. of gas daily.

Wells No. 3-A Scott, SE SW NE Section 25-10-11, was a machine. Hall No. 1-A Hicks, NW NE SE Section 11-11-8, was a location.

Kay County

Tide Water Associated Oil Co. No. 1 Missell, SE NE Section 27-28-1w, Southeast Braman area, Kay County, was dry and abandoned in Arbuckle lime at 3,625-3,707 ft., total depth.

Kerlyn Oil Co. No. 1 College, NE SW NW Section 21-13-3w, new test in Oklahoma County, had dug cellar and pits.

Sinclair Prairie Oil Co. No. 41 West Kisner, SE NW NW Section 19-22-3w, was location for a test in the Garber area, Garfield County.

(Continued on Page 80)

AMPLE FLUID COURSES

—Well Protected Slips!

These are just two of the new improved features of the McKissick Short Type Tubing Catcher. Special attention has been paid to assure sufficient clearance of both heads and slips attached on a practically frictionless assembly. There are fewer working parts. The well-protected and wide slips assure a better distribution of the shock load with less tendency to distort casing.

Positive Anchor Attachment

With the anchor attachment the McKissick Catcher may be set at the exact point desired by merely rotating the tubing to the left. No raising or lowering of the tubing to anchor. Only one part, freely fitted, functions to engage the slips to the casing for a positive anchor.

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Southwest Texas District

By F. L. SINGLETON

Discovery in Robstown Area; Oil Found in La Gloria Field

CORPUS CHRISTI, Tex., July 17.—The apparent discovery of a field in the Robstown area, Nueces County, together with prospects of opening the first oil production in the La Gloria distillate field, Jim Wells County, featured developments in the South Texas district.

Shield Oil Co. No. 1 Phil Magee, Block 10, Geo. H. Pauls subdivision of the Driscoll Ranch in the Joaquin de Herrera Grant, showed promise of production as a 15-minute drill stem test at 5,556-82 ft. through a ⅝-in. choke top and bottom, recovered 360 ft. of oily mud, of which 75 per cent was 42-gravity oil and the balance mud and wash water. Working pressure built up to 300 lb. Bottom-hole flowing pressure was 1,800 lb. The well is coring in search of a deeper sand.

A good producer would result in an extensive drilling campaign as the area is divided into many ownerships with Texas Co., Magnolia Petroleum Co., Cities Service, Arkansas Fuel Oil Co., Sun Oil Co., Stanolind Oil & Gas Co. and Tide Water Associated holding close-in protection. The well is on a farmout lease from Shell Oil Co., Inc., in an area worked extensively with geophysical instruments.

Minnie Bock Field

In the same county in the Minnie Bock field, Texas Conservative Oil Co. No. 1 J. E. Humble, approximately ½ mile northeast of production, tested salt water and a small amount of oil through perforated casing at 5,657-60 ft. The perforations have been squeezed off and another test is being made in the 5,900-ft. horizon. This well defined production in the regular 3,800-ft. sand, and the present sands are being tested on the strength of an electrical survey. In the field proper, Awoeb Oil Co. and others No. 1 Bock, perforated casing at 3,814-23 ft., and was completed for an initial production of 70 bbl. daily flowing through a 9/64-in. choke. Tubing pressure was 1,500 lb. and shut-in casing pressure 1,625 lb. The well has a very high gas-oil ratio. Blanco & Buchanan No. 1-C Gandy perforated casing at 3,821-26 ft. and on a 1-hour drill-stem test recovered 900 ft. of gas-cut mud. The hole is being swabbed. Reed & Cox No. 1 Ruegg has apparently defined the 3,800-ft. sand as the well is shut down at a total depth of 4,120 ft. after only a few feet of sand was logged. It may be carried deeper.

Magnolia Petroleum Co. No. 1 Maun, approximately 6,000 ft. east of the discovery well of the La Gloria field, Jim Wells County, showed promise of opening the first oil production in the area, as a 12-minute drill stem test recovered 200 ft. of 38.5 gravity and 200 ft. of brackish water. Working pressure built up to 1,025 lb. Bottom-hole flowing pressure was 3,200 lb. A cement squeeze-job has been made in an attempt to eliminate the salt water, and the well was being retested.

Distillate Producer in Jim Wells

W. R. Quinn and others No. 1 Pundt, the discovery well of the Wade City field, Jim Wells County, has been completed as a distillate producer. During the last 24-hour gauge, it flowed 24 bbl. of water-white distillate through a ¼-in. choke under a tubing pressure of 1,800 lb. and shut-in casing pressure 1,900 lb. It is producing through perforated casing at 4,974-98 ft.

Two other fields recently opened in the county got producers, extending production. In the Ben Bolt field, Bridwell Oil Co. No. 2 Beasley, recovered 120 ft. of oily mud on a 10-minute drill stem test at 5,281-96 ft., and 5½-in. casing was cemented on bottom at 5,296 ft. after an electrical survey was made. Reese & Dunn No. 2 Smith, 933 ft. south of No. 1, is flowing oil and wash water while cleaning out through a 3/32-in. choke. It was drilled to 5,450 ft. and is testing through perforated casing at 5,250-55 ft. Locations were made for H. J. Mosser No. 1 E. Peradis, S.A.&M.G. Survey, Sec. 53 and Bridwell Oil Co. No. 1 C. G. Elizondo in the La Trinidad grant.

Reynolds Field

In the Reynolds field, Texas Gulf Production Co. No. 2-A Miller, 1,300 ft. northeast of the discovery, is bottomed at 5,172 ft. and 5½-in. casing was cemented on bottom. Sand with an oil odor was logged at 5,079-82 ft., shale and sandy shale at 5,084-95 ft. and oil sand at 5,133-52 ft. The hole is bottomed in shale, cored at 5,152-72 ft. Tom Graham No. 1 Mosser, Fred Frank Survey, Block 3, is bottomed at 5,195 ft. with 5½-in. casing cemented on bottom. Oil sand was cored at 5,133-47 ft., and casing was cemented after a 10-minute drill-stem test recovered 4,000 ft. of pipe line oil. Rand Morgan No. 1 fee is bottomed at 5,173 ft. and an electrical survey is being made. Sandy shale with a gas and oil odor was cored at 5,101-61 ft.

At Phillips Petroleum Co. No. 1 Toland, midway between the La Rosa and Bonnieview fields, Refugio County, showings of oil and gas have been logged at intervals from 5,748-6,150 ft. Two feet of gas sand and 3 ft. of oil sand was recovered at 5,743-48 ft., gas sand with a salt water taste at 5,748-53 ft., sand with an oil and gas odor at 5,873-78 ft.; sandy shale with an odor of oil at 5,878-83 ft. Small streaks of sand showing oil were logged at 5,932-65 ft. No drill-stem test has been attempted and the well is coring below 6,200 ft. Approximately 9 miles west of Woodsboro, in the Cuadrilla Survey, Humble Oil & Refining Co. has started operation on No. 4 Thompson, a deep test.

In the East Mathis pool, San Patricio County, recently opened by Seaboard Oil Co., Seaboard Oil Co. No. 1 Blumberg, approximately 9,000 ft. northeast of the discovery in the A.B.&M. Survey No. 13, was drilled to 6,015 ft., and is shut down after a drill-stem test through perforated casing at 4,417-22 ft. It tested 900 lb. working pressure. The discovery, No. 1 Persons, was completed as a small producer through perforated casing at 5,260-68 ft.

Kelsey Field

The Brooks County side of the Kelsey field was defined to the north with abandonment of Humble Oil & Refining Co. No. 15 McGill at 6,150 ft. It failed to find the 6,100-ft. sand found in No. 5 McGill, the only well producing from this horizon.

In Webb County, V. G. Schimmel opened a shallow field along the Laredo-Pettus district, as No. 1 Benavides, B.S.&F. Survey, is being rigged up to pump after it showed for a small producer on a production test through perforated casing 2,339-47 ft. Oil sand was cored at 2,344-50 ft., total depth. The well is 1½ miles southwest of the Volpe field, and the area has been named West Cole. In the Volpe field, Magnolia Petroleum Co. is completing No. 7 Volpe-Benavides as the third producer. Sand was cored at 2,468-72 ft., total depth, and 7-in. casing was landed on bottom.

Along the Balcones fault line, in Bexar County, Long Bros. No. 1 T. P. Applewhite, B. Ruiz Survey, is bottomed in the Edwards lime at 2,661 ft., and a production test may be made of the Navarro-Taylor section which carried a showing of oil. The Del Rio lime was topped at 2,262 ft., Georgetown lime at 2,311 ft. and the Edwards lime at 2,335 ft.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Caldwell County

Salt Flat field: Texamerican Oil Corp. No. 6-C W. F. Davis, 2,712½ ft., 125 bbl. oil, 5 bbl. water, pumping.

Duval County

Cedro Hill field: Magnolia Petroleum Co. No. 12 Duval County Ranch Co., 2,536 ft., abandoned. Hoffman field: Cox & Hamon No. 10 Hoffman, 2,745 ft., 66 bbl., jetting. Magnolia Petroleum Co. No. 38 Weil, 2,784 ft., 20 bbl., pumping. Piedra De Lumbre field: Magnolia Petroleum Co. No. 29 Duval County Ranch Co., 2,172 ft., 520 bbl., ⅝-in. choke. Rancho Solo field: Clark & Cowden No. 2-A Peters, perforated casing 1,822-34 ft., 125 bbl., pumping.

Guadalupe County

Darst Creek field: Chiquita Oil Co. No. 4 Tadlock, 2,643 ft., 47 bbl. oil, 50 bbl. water, pumping.

Jim Wells County

Magnolia City field: R. A. Irwin No. 2 Garcia, 5,913 ft., abandoned. South Alice field: Henshaw Brothers and others No. 4 Thigpen, perforated casing 5,335-41 ft., 172 bbl., ⅛-in. choke.

Medina County

Chacon Lake field: Charles Wagner No. 40-A Medina Irrigation Farms, 400 ft., 1 bbl., pumping. Dunlay field: M. L. Walker No. 2 Zueberbuler, 942 ft., abandoned.

Nueces County

Luby field: Seaboard Oil Co. No. 44 Luby, perforated casing 4,340-45 ft., 119 bbl., ⅛-in. choke. Stanolind Oil & Gas Co. No. 25 Spessard, perforated casing 4,326-40 ft., 87 bbl., ⅛-in. choke. South Clara Driscoll field: Texas Co. No. 1 Hattie Flinn, perforated casing 5,020-28 ft., 20 bbl., 9/64-in. choke. Welling Oil Co. No. 2 Richardson, perforated casing 5,148-55 ft., 234 bbl., ⅛-in. choke.

Refugio County

La Rosa field: Shields Oil Co. and others No. 3 Sasse, 6,357 ft., 105 bbl., ⅛-in. choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 2 Heflebower, perforated casing 5,660-70 ft., 85 bbl., 7/64-in. choke.

Starr County

Rincon field: Baldridge & Bessels No. 1 W. I. Cameron, 4,422 ft., abandoned. Sun field: Sun Oil Co. No. 6 McKinney, perforated casing 4,656-80 ft., 106 bbl., ⅛-in. choke.

Webb County

Killam field: O. W. Killam No. 4 Garcia, 2,047 ft., gas well. Volpe field: Magnolia Petroleum Co. No. 6 Volpe-Benavides, 2,478 ft., 70 bbl., pumping.

Zapata County

Escobas field: Nash & McKey No. 17 Garza, 1,248 ft., abandoned. Mirando Valley field: Interstate Mineral Co. No. 2 Martinez, 1,860 ft., 88 bbl. fluid, 30 per cent water, jetting.

Canadian Gasoline Consumption Shows Gain This Year

OTTAWA, Ont.—Official figures of Canadian gasoline sales for the first 3 months of 1939 show a total of 115,893,000 gal. compared with 109,927,000 gal. for the same period last year. March sales, however, show declines in five of the nine provinces, reversing the upward trend of recent years. Ontario, the major gasoline using province, shows an increase.

Imports of gasoline lighter than .8236 gravity in April totaled 2,139,372 gal. valued at $162,548 against 2,417,241 gal. at $194,913 in March. Imports of natural casinghead compression or absorption gasoline lighter than .6690 gravity in April amounted to 1,017,699 gal. at $70,335 compared with 2,293,991 gal. at $148,476 in March. Exports of gasoline and naphtha in April were 11,088 gal. compared with 1,370 gal. in March.

North Louisiana, Arkansas

By GEORGE WEBER

Abandon Sibley Deep Test; Shows in Magnolia Outpost

SHREVEPORT, La., July 17.—Activity in Shreveport's field, the abandoning of Sibley area's deep test at 10,383 ft. and activity in the Bunkle-Eola field of Avoyelles Parish, headed the developments in the North Louisiana area. Logging of shows of oil on an electrical survey at Atlantic Oil Co. No. 1 Pinewood Lumber Co., a wildcat test 10 miles southwest of the Magnolia field in Columbia County, led the reports from South Arkansas.

The forty-second producer was reported for the Shreveport field when C. H. Lyons No. 1 Agurs was completed for 20 bbl. daily from a total depth of 5,597 ft. The Pettit lime was topped at 5,585 ft. Harry Fotiades No. 1 Furman, Section 35-18-14, is drilling in shale and lime at 4,239 ft. Bids for leasing the 84-acre tract comprising the Municipal Golf Course on the outskirts of the city will be received July 25. The tract was leased several months ago but the city was unable to deliver a clear title.

A deep test in the Sibley-Dubberly area of Webster Parish, carried to nearly 10,400 ft., has been abandoned after the third unsuccessful attempt for a drill-stem test at the regular pay level. The test, Union Producing Co. No. 1 Walker Unit, Section 30-18-8, is 2 miles northeast of four gas-distillate producers. The last drill-stem test was made after casing was perforated from 5,610-60 ft.

Stanolind Oil & Gas Co. No. 131 Dillon, Section 14-21-15, deep test in the Pine Island area of Caddo Parish, continued its efforts to repair a break in casing. The 10¾-in. casing parted three joints from the top. Depth is 3,395 ft.

The twelfth producing well in the Bunkle-Eola field in Avoyelles Parish was brought into production when Amerada Petroleum Corp. No. 1 Irion, Section 6, was turned into tanks. The test is ungaged and is reported to have a heavy gas pressure. Amerada No. 1 Avoyelles, in Section 5, is waiting on cement and is due to drill plug.

H. M. Harrell and others No. 1 Thompson, Section 20-17-11, a mile southeast outpost to the Sligo field, Bossier Parish, cored below 5,398 ft. in the Travis Peak zone. Operators will test the entire zone before testing a show of distillate in the Pettit zone.

SOUTH ARKANSAS

Atlantic Oil Co. No. 1 Pinewood Lumber Co., wildcat in NE¼ Section 16-18-22, 10 miles southwest of the Magnolia field of Columbia County, completed an electrical survey which showed an oil-saturated zone in the Cotton Valley formation from 6,950-60 ft. The well has since been drilled to 7,043 ft. and is now coring.

Northeast of production in the Lafayette County pool, Stamps, Erwin & Leach and East Texas Refining Co. have set surface casing in No. 1 Bodcaw Lumber Co., Section 19-16-23.

Border Counties

The deep three-horizon wet gas Waskom area of northeastern Harrison County is becoming active. Two new tests have been staked in addition to three by Arkansas Fuel Oil Co., discoverer of the pool. M. M. O'Banion of Marshall announced that Alfred P. Cline was preparing to start two tests on acreage between Arkansas Fuel No. 1 Abney, Glen Rose discovery gas well, and its No. 1 Davis, 1¾-mile northeast outpost which discovered the Travis Peak gas pay.

In Cass County, southeast of Atlanta, Red Iron Drilling Co. has abandoned No. 1 Spearman, wildcat in the Burnham Survey, after drilling to 3,812 ft. Several zones of porosity were drilled but showed no saturation.

Estimated Daily Production

Estimated daily gross production for week ending July 14:

NORTH LOUISIANA

	Barrels
Bellevue	500
Caddo light	4,455
Caddo heavy	2,440
Converse	535
Cotton Valley heavy	60
Cotton Valley light	*11,425
Cross Lake	7,260
DeSoto & Red River	1,135
Elm Grove	245
Haynesville	2,830
Holly	75
Homer	2,730
Lisbon	3,140
Pleasant Hill	120
Rodessa	27,105
Sarepta-Carterville	†450
Sligo	1,320
Sugar Creek	300
Urania	2,800
Zwolle	2,875
Total	71,740

SOUTH ARKANSAS

Atlanta	320
Buckner	2,030
Champagnolle	2,000
El Dorado	1,695
Lewisville	105
Lisbon	250
Magnolia	11,445
Miller County	240
Nevada	600
Rodessa	3,970
Schuler	18,005
Smackover light	1,950
Smackover heavy	14,900
Stephens	565
Troy	1,110
Urbana	1,100
Village	1,105
Total	61,390

Texas side of Rodessa field, 29,180 bbl. daily.
*3,625 bbl. is distillate. †180 bbl. is distillate.

NORTH LOUISIANA COMPLETIONS

Caddo Parish

Burton-Harlan No. 1 Perchee, 50 bbl. daily from total depth of 1,535 ft. C. H. Lyons No. 1 G. Augurs, 20 bbl. daily from total depth of 5,597 ft. W. M. McDonald No. 1 J. Burton, 50 bbl. daily from total depth of 1,580 ft.

La Salle Parish

Graham-Harter No. 3 Urania Lumber Co., abandoned at total depth of 40 ft. G. C. Walsenham No. 4 Dean, 50 bbl. daily from total depth of 1,631 ft.

Natchitoches Parish

J. F. Lent No. 1 Whatley, salt water and abandoned at total depth of 3,300 ft.

Ouachita Parish

Carbons Consolidated No. 1 Wall, 2,250,000 cu. ft. of gas daily from total depth of 2,241 ft.

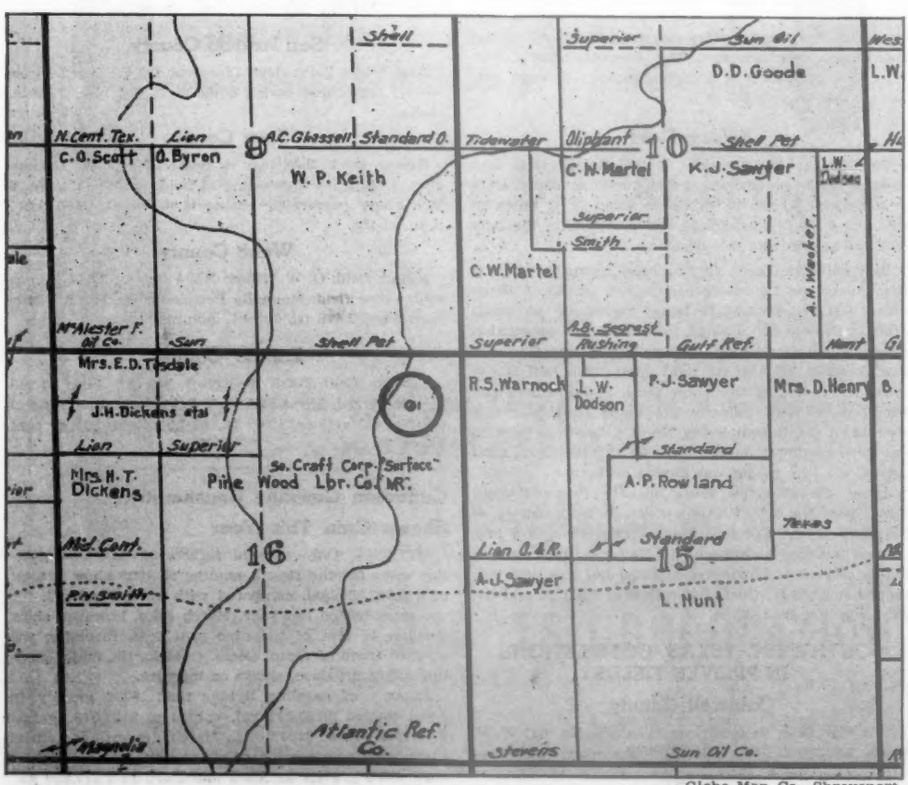
Sabine Parish

Potter No. 1 Ebarb, 250 bbl. daily from total depth of 2,180 ft.

Webster Parish

Hunt Oil Co. No. 1 E. L. Stewart, 352 bbl. distillate daily from total depth of 8,823 ft. Hunt Oil Co. and

(Continued on Page 84)



Globe Map Co., Shreveport

South Arkansas' current Smackover lime wildcat is Atlantic Refining Co. No. 1 Pine Woods Lumber Co., drilling on the Experiment prospect in southwest Magnolia County

CAMERON MUD VALVES

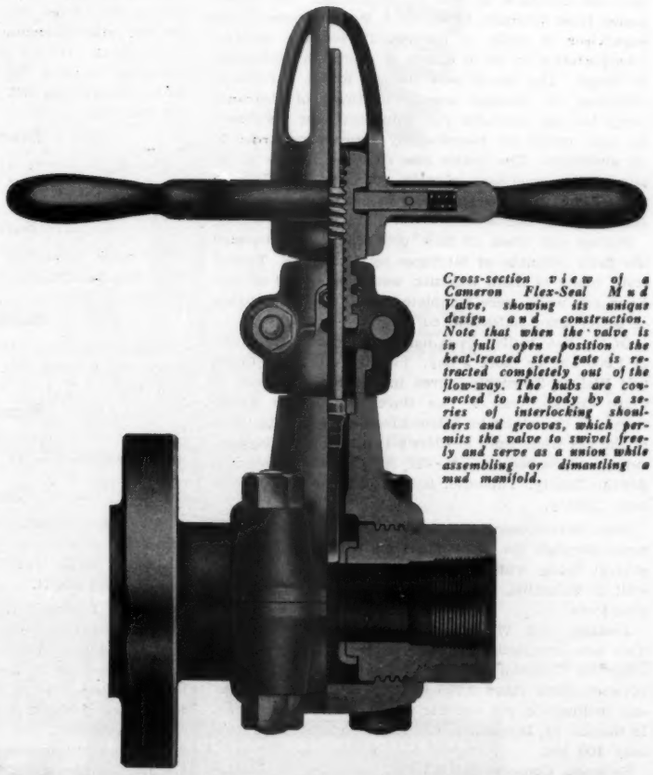
Quickly and Economically

Left—The resilient flow-way insert may be replaced quickly and easily by simply releasing the four body bolts and dropping the lower half of the body.

The simplified design of the Cameron Flex-Seal Mud Valve makes it unnecessary to remove the valve from the line and haul it to a shop for repairs. In all cases, the drilling crew with rig tools can make the necessary repairs in the field, quickly and easily.

The Cameron Flex-Seal Mud Valve is equipped with a renewable resilient flow-way insert, which, at a very slow rate of wear, absorbs the cutting action of abrasive-laden fluid and provides a leak-proof seat for the gate. Even though the gate may be sand-cut or damaged, after long service, a positive shut-off is effected when it is imbedded in the resilient insert. The valve opens and closes with remarkable ease under full rated test pressure of 6,000 pounds.

Operators who are experiencing difficulty with conventional types of mud valves are invited to try a Cameron Flex-Seal Mud Valve, or write for fully descriptive literature.



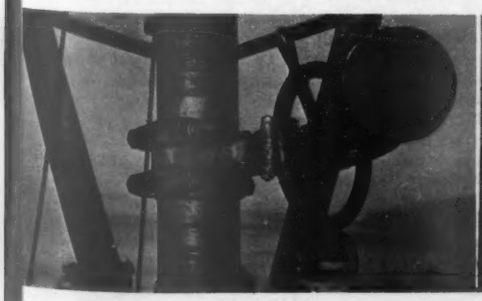
Cross-section view of a Cameron Flex-Seal Mud Valve, showing its unique design and construction. Note that when the valve is in full open position the heat-treated steel gate is retracted completely out of the flow-way. The hubs are connected to the body by a series of interlocking shoulders and grooves, which permits the valve to swivel freely and serve as a union while assembling or dismantling a mud manifold.

CAMERON IRON WORKS, INC.

711 MILBY ST. HOUSTON, TEXAS

Export—74 Trinity Place, New York, N. Y.

California Distributor—Howard Supply Company, Los Angeles



Michigan Field Report

By
O. C. PRESSPRICH

Continual New Development Offsetting Results of Proration

SAGINAW, Mich., July 17.—Continual new development has practically offset results of state-ordered proration in Michigan. Only the fact that June had one less day than May prevented last month from setting another production record. Daily output increased to 67,549 bbl. from 2,413 reporting wells, compared with 66,843 bbl. in May from 2,399 wells. The totals were: June, 2,026,740 bbl.; May, 2,076,470 bbl.

Proration did cut heavily into the yield from the Bloomingdale field in Van Buren County, slicing off about 2,500 bbl. The Freeman-Redding field in Clare County felt more stringent effects to the extent of about an 800-bbl. drop.

Making up for the drop in the older fields, the Kent County area, the state's newest oil field, boosted daily output by 4,200 bbl., in spite of proration and jumped to fourth place in production, being topped by Van Buren, Freeman-Redding and Gladwin's Buckeye, once Michigan's most spectacular field.

Along with proration, the state oil advisory board last week broadened limitations to include transportation and purchase as well as production. The order, issued from Whittier, Calif., by J. P. Hoffmaster, state supervisor of wells, at the board's request, declares transportation of oil in excess of proration limitations is illegal. The board sent notices to all purchasers declaring the message was a certificate of clearance "only for the allowable run transported or purchased by you" under the board's July 1 proration order to oil producers. The notice also required buyers to report to the supervisor of wells not later than July 15 "all oil runs by separate leases in prorated areas from July 1 to 10, inclusive."

During the week 17 new producing wells boosted the daily potential of Michigan by 11,500 bbl. Twelve tests, many of them wildcats, were abandoned as dry. Four gas wells were completed with total production of better than 18,500,000 cu. ft.

Of the new wells, seven had initial production rated at 1,000 bbl. or more a day. Two were in Kent County's Walker Township, three in the Redding pool in Clare County, one in Van Buren's Columbia Township and the other in Salem of Allegan County. Two of the gas wells were in Clare's Freeman. The biggest, rating 10,000,000 cu. ft., is in Clayton Township, Arenac County. The other is in Home Township, Montcalm County.

Most development was in Van Buren County, scattered through six townships, but with little success, several being wildcat tests. Aside from a 1,000-bbl. well in Columbia, only 3 of the 10 completions were producers.

Redding and Walker fields had the best results. Two new completions, one by Gulf Refining Co., the other by Freeman Oil Co., in Section 28 of Redding, between them rated 2,700 bbl. In Section 34, American Drilling Co. got another good for 1,500 bbl. a day. In Section 34, Rowmor & Gordon completed one rating only 100 bbl.

Swanson Consolidated Oil Co., operating in Section 5 of Walker, had two good wells, one doing 800 bbl. after being acidized, the other 1,500 bbl. Smith Petroleum Co. got one good for 1,000 bbl., naturally, in Section 4.

Six of the eight completions in Salem of Allegan were producers, with combined daily potential of 2,300 bbl., due largely to Socony-Vacuum Oil Co. No. 4 T. Weber rated at 1,200 bbl.

Abandoned wildcats were in Baltimore Township, Barry County; Benton Township of Berrien; Branch County's Butler Township; Colon Township of St. Joseph County, and in scattered sections of Van Buren.

Indications of more extensive wildcatting were seen in the locations for which the state Conservation Department issued permits. The total was 29, scattered through 18 townships and 10 counties. Five of seven for Allegan are in Salem Township and four of eight for Van Buren County are in the Columbia pool. Four permits were granted in the Walker-Wyoming field in Kent County, three in Clare's Freeman-Redding. Clinton, Gladwin, Kalamazoo and Ottawa counties will see more exploratory tests.

Following summarizes the past week's completions:

Allegan County

Salem Township (4n-13w)—One big well among six producers increased Salem's daily potential 2,320 bbl. There were two dry holes, Red-Man Oil Co. No. 1 Steppes, NW SE NE Section 1, and American Drilling Co. No. 2 Loew, NE NW SE Section 3. In NW SW SE Section 2, Daily Crude Oil Co. completed No. 3 Steppes, acidizing to get 50 bbl. daily. Socony-Vacuum Oil Co. acidized No. 4 T. Weber, NE NW NE Section 11, which brought production to 1,200 bbl. Muskegon Development Co. No. 2 Hoverich, SW SE NE Section 11, was acidized for 150 bbl. while in Section 12, C. Norton completed No. 1 Weber, NW NW NW, for 150 bbl. after acidizing. Salem Oil & Gas Corp. rated No. 2 Smith, NW SW SW Section 14, at 500 bbl. after acidizing. Red-Man Oil Co. was getting 350 bbl. from its No. 5 Red-Cap, NW SE NE Section 22, after acidizing the test.

Arenac County

Clayton Township (20n-4e)—W. E. Ross completed No. 1 Crandall, C SE SE Section 10, gaging 10,000,000 cu. ft.

Barry County

Baltimore Township (2n-8w)—Abandoned as a dry hole was Perrine No. 1 Clark, a wildcat in NW NW SE Section 22.

Berrien County

Benton Township (4s-18w)—Sprenger Brothers abandoned its wildcat, No. 1 Huwig, E½ E½ SW Section 10.

Branch County

Butler Township (5s-5w)—LeBlanc No. 1 Sobeske, SE SW SE Section 31, a wildcat test, was abandoned.

Clare County

Freeman Township (6s-18w)—Taggart Brothers, Inc., completed two gas wells. No. 6 Dilling, C S½ Section 10, had 1,700,000 cu. ft. No. 8 Perkins, NE¼ Section 15, 7,800,000 cu. ft.

Redding Township (19n-6w)—Three of four new Redding producers rated at 1,200 bbl. a day or better. Gulf Refining Co. gaged 1,200 bbl. in No. 4 Alford, N½ NW SW Section 28, and in the same section, N½ SW SW, Freeman Oil Co. completed No. 2 State, acidized to increase yield to 1,500 bbl. American Drilling Co. No. 2 Newcomer, N½ NE NE Section 32, gaged 1,500 bbl. a day, but in Section 34, SE SW SE, Rowmor & Gordon completed No. 1 Goldsmith, good for only 100 bbl.

Kent County

Walker Township (6n-12w)—Walker Township's importance was increased by three more big producers with combined potential of 4,300 bbl. Smith Petroleum Co. rated its No. 3 Gilbert, NE SE SW Section 4, at 1,000 bbl. Acidized, production jumped to 800 bbl. a day from Swanson Consolidated Oil Co. No. 6 Van Dyke, NE SE NW Section 5. An adjacent well, owned by Swanson interests, No. 7 Van Dyke, SE SE NE Section 5, had 1,500 bbl. after being acidized.

Montcalm County

Home Township (12n-6w)—Leslie T. Barber No. 1 Belwiderer, SE NW NW Section 26, had a flow of 4,290,000 cu. ft.

St. Joseph County

Colon Township (6s-9w)—A. J. Hoyt abandoned No. 1 Jailer wildcat, SE SE NW Section 12.

Van Buren County

Bangor Township (2s-16w)—Blood & Hendershot abandoned No. 2 Jackson, SE NE NE Section 24.

Bloomingdale Township (1s-14w)—Bloomingdale Development Co. completed No. 5 Decker, SW SW SE Section 7, acidized to get 130 bbl. Anna Prather No. 1 Merrifield, SW SE SE Section 8, was abandoned.

Columbia Township (1s-15w)—Daily Crude Oil Co. rated production at 400 bbl. daily after acidizing No. 4 Teel, NE NE NW Section 12. Lockwood No. 2 Henry, NE SW NW Section 12, was barely commercial after acid treatment being but 25 bbl. Best of the new Bloomingdale developments was Universal Oil & Gas Co. No. 1 Porath, NE NE NW Section 13, 1,000 bbl. R. Cooper abandoned No. 5 School, NE NE NW Section 24.

Covert Township (2s-17w)—Coloma Development Co. abandoned No. 1 Sanders, SE SW SW Section 28.

Pine Grove Township (2s-17w)—Rau & Shine No. 1 Root, NE NE SE Section 34, was dry.

South Haven (1s-17w)—Rowmor Corp. abandoned No. 1 Kuhn, SE NW NE Section 36.

MICHIGAN CRUDE PRODUCTION

	Wells	Daily runs
Porter-Yost	378	5,448
Greendale-Chippewa	208	1,530
Geneva-Midland	2	14
Sherman-Isabella	59	982
Wise-Isabella	7	731
Vernon-Leaton-Denver	79	818
Freeman-Redding	92	13,345
Grant-Clare	2	7
Edenville	31	841
Beaverton-Gladwin	20	170
Bentley-Gladwin	34	476
Buckeye-Gladwin	381	6,922
Secord-Gladwin	2	...
Ogemaw	240	1,788
Adams-Arenac	14	157
Clayton-Arenac	53	1,842
Akron-Tuscola	2	2
Saginaw-Bay area	61	106
Birch Run-Saginaw	25	37
Dundee-Monroe	3	17
Montcalm	52	443
Allegan	307	9,287
Muskegon	81	96
Kent	49	6,732
Van Buren	233	15,758
Total	2,413	67,549

Western Kentucky

(Continued from Page 60)

Odell-Brown & Richardson No. 4 Wren Estate, spudding in.

McLean County, 2 miles southwest of Beech Grove: Mocarz Oil Co. No. 1 Ed Traylor (Frisse), drilled 5 ft. of McClosky saturation, total depth 1,238 ft.; will set casing and acidize; looks like pool discovery.

Muhlenberg County, Weir district: Desmond & Cooper No. 2 C. Ebling, dry hole, total depth 731 ft. Three miles northeast of Central City: Palmer Drilling Co. No. 1 Nelson Creek Coal Co., dry hole, total depth 1,326 ft. South Carrolton district: Fred Phillips No. 1 Nichols Brothers, location. Bolton district: South Penn Oil Co. No. 1 W. Rhoades, spudding in.

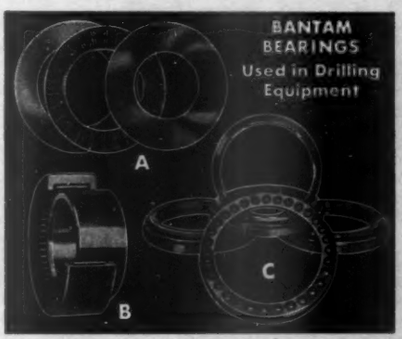
Ohio County, Davidson Station: N. C. Hunter No. 1 Sadie Fentress, location. Dundee district: W. E. Neal and others No. 2 Russell Mattingly, dry hole through Jett sand. Narrows district: L. & D. Oil Co. No. 1 M. E. Powers, dry hole, total depth 865 ft. No. 2, location. Taffy district: Tom Graham Oil Co. No. 2 Delia Vance, 10-bbl. well in Corniferous lime at 1,758-69 ft., total depth 1,733 ft.

FAILING'S FAMOUS DRILLING RIGS Use Bantam Bearings FROM TOP TO BOTTOM

A STELLAR attraction at Houston's recent Oil World Exposition was the Failing 4,000 ft. Portable Slim Hole Drilling Rig shown here. Crowds watched the impressive demonstrations and oil men praised the "clock work precision", "perfect coordination" and smooth, speedy performance of the equipment.

BANTAM takes pride in pointing out that these fine Drilling Rigs use Bantam Bearings from top to bottom, at all points where friction problems are toughest. Note arrows at right. More and more machinery manufacturers specializing in oil field equipment are standardizing on Bantam Bearings to insure maximum dependability.

BANTAM BEARINGS CORPORATION
South Bend, Indiana
Subsidiary of THE TORRINGTON CO., Torrington, Conn.



A Bantam Straight Roller Thrust Bearings have been widely adopted for use in swivels.

B Bantam New-Type Quill Bearing. Compact. High load capacity. Widely used for crown and traveling blocks.

C Bantam—Angular Contact Ball Bearings—standard equipment on many of the finest high speed rotary tables.

1. Bantam Quill Bearings are used in FAILING crown blocks.
2. Bantam Quill Bearings are used in FAILING traveling blocks.
3. Bantam Straight Roller Thrust Bearing is used in the FAILING swivel.
4. Bantam Quill Bearing is used in the FAILING draw works idler.
5. Bantam Angular Contact Ball Bearing is used in the FAILING rotary table.

TAPERED ROLLER—STRAIGHT ROLLER—BALL

BANTAM

BEARINGS

California Field Report

By
L. P. STOCKMAN

Coles Levee--Tupman Areas May Be On One Huge Fold

LOS ANGELES, Calif., July 17.—Developments indicate a possibility that the Coles Levee and Tupman fields of Kern County may be located on one fold of huge extent with the oil being trapped by the pinching out up-dip of the Stevens sand and on the southeast by the plunging Elk Hills anticline. Richfield Oil Corp. No. 14-3-B, Section 3-31-25, is nearing where the pay should be found. It is down 9,160 ft. and should reach the Stevens sand within the next 100 ft. if the Coles Levee and Tupman fields are on one fold. This well lies north of the Coles Levee field and between it and the Tupman area. Seismograph surveys of Ohio Oil Co. and Richfield Oil Corp. indicated a syncline between the fields

Wells completed in the Coles Levee field during its early life produced oil testing around 35 gravity whereas wells of Richfield Oil Corp. in the Tupman field showed a very high gas-oil ratio and tested around 53 degrees The productive zone in the Coles Levee field was absent in the Tupman field and the productive horizon in the Tupman field is lower stratigraphically, indicating that deeper drilling in Coles Levee may find a second productive zone that should be equivalent of the productive zone in the Tupman field. This line of reasoning appeared sound for some time but it seemed blown up when No. 20-1 Kern County Land of Standard Oil Co. in Section 9-31-25 was brought in last week flowing 2,150 bbl. of 53.7 gravity oil along with 35,400,000 cu. ft. of gas from 9,216 ft. This well is at the extreme western end of the Coles Levee field and now for the first time Coles Levee produces a high gravity oil comparable with that in the Tupman field to the northwest and has duplicated the characteristic of the Tupman field, large gas volume and a high gas-oil ratio.

All indications now point to probability that these areas are one field devoid of the projected syncline between the two but this will not be determined until a well between the two areas has been completed as a producer or abandoned as a duster. One of the most interesting features is that Standard Oil Co. has cored 12 ft. of rich oil sand in No. 21-1 K.C.L., in Section 19-30-25 at 9,541-53 ft. This sand is heavily saturated and with good porosity might make a good well. It is over 1 mile northwest of Richfield Oil Corp. discovery well at Tupman. Is it possible the Tupman-Coles Levee field is one fold extending northwest to southeast over 6 miles? Coles Levee has been found productive for a width of more than 2 miles and no dry holes have been drilled so its maximum length and width remain to be determined.

If this is found to be one single field extending southeastward from No. 21-1 Kern County Land in Section 19-30-25 to and beyond the lease of Union Oil Co. in Section 11-31-25 and the lease of Tide Water Associated Oil Co. in Section 14-31-25 it may mean a possibly productive area involving 10,000 acres. Richfield Oil Corp. and Ohio Oil Co. both seemed to grasp the possible significance of the bifurcated Elk Hills axis about the same time. The first wells of each proved productive. The discovery well in the Tupman field was No. 1 K.C.L.-Western of the Richfield Oil Corp. with an initial daily production of 3,752 bbl. of 49.2 gravity oil and 18,000,000 cu. ft. of gas from a depth of 8,677 ft. This well is in Section 32-30-25 and was completed November 27, 1938. The discovery well in the Coles Levee field was No. 1-F of Ohio Oil Co. in Section 10-31-25 and it was completed flowing 732 bbl. of 45.1-gravity and 5,900,000 cu. ft. of gas from 9,365 ft. on November 11, 1938.

Montebello

The Montebello field of Los Angeles Basin where operators are developing a town-lot area in the west end continues to lead the state in drilling operations. The Wilmington field has been supplanted by Montebello and indications are these fields will top the list for several months. One well and one recompletion were recorded in the Montebello field. Union Oil Co. No. 2 Calkins was completed flowing 950 bbl. of 37.8-gravity through a 20/64-in. bean from 7,645 ft.

The recompletion in the west end of the Montebello field was Pongratz Oil Co. No. 1 Newmark, returned to production flowing 1,660 bbl. of 37.1-gravity and 1,480,000 cu. ft. of gas from 7,641 ft. This well and No. 6 Whitehead of Standard Oil Co. are the most westerly producers in the deep zone. R. R. Bush Oil Co. found the seventh zone wet in No. 1 Alauzet on a test at 7,191 ft. and this well in the extreme western end of the extension will be deepened to the La Merced zone. This company will spud a second well on the Olds lease. Judging by their depths and the excellent footage at least 15 wells should be completed in Montebello within 30 days and peak development reached late in September. Only one well has been completed south of Beverly Boulevard but at least the northern portion can be considered proved. The eastern end of the western extension is still the hot spot.

Wilmington

Two wells were put on production in the Wilmington field but neither was allowed to establish a maximum potential. Operators are content to allow engineers to establish potentials by bottom-hole pressures and allowance for location on the structure. In the town-lot section, Ring Oil Co. recompleted No. 3 Harbor flowing 255 bbl. of 28.7-gravity oil from the Ford zone after the hole had been redrilled and deepened to 5,718 ft.

No tideland wells were completed but five should be tanking oil soon. Although the tideland wells completed by Long Beach Oil Development Co. have shown substantial production this company has hardly scratched the potential locations. A large part of the Long Beach Harbor section is out beneath the Pacific Ocean. Up to the present Long Beach Oil Development Co. has drilled only necessary offset wells along the ocean front to protect the submerged tideland from drainage. From now on the company will begin developing the tideland accumulation farther out in the ocean and it is expected these wells will show large potentials. The submerged tideland will be developed by directional drilling and will be limited to the bottom of the Terminal zone until next year at the latest, as operators have made a field agreement to refrain from development of the deep Ford zone until 1940. During the week Union Pacific Railroad Co. completed No. 103 flowing 251 bbl. of 23.9-gravity and 280,000 cu. ft. of gas from 2,895 ft.

(Continued on Page 103)

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	July 8		July 1			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	70,944	10,135	62,939	8,991	381,403	272,750
Fuel oil	60,870	8,696	81,898	11,700	1,234,523	.....
Diesel and gas oil	.....	.....	.....	.....	163,501	.....
Gasoline	.....	.....	282,180	40,311	1,883,121	1,784,123
Kerosene	.....	.....	.....	.....	122,200	199,453
Foreign exports—						
Crude oil	286,454	40,922	421,349	60,193	7,846,875	12,849,218
Fuel oil	116,201	11,600	184,372	26,339	4,616,723	4,759,144
Diesel and gas oil	305,172	43,596	258,008	36,858	3,797,033	3,061,208
Gasoline	100,655	14,379	.....	.....	3,836,098	3,667,470
Kerosene	.....	.....	.....	.....	773,750	598,020
Lubricants	.....	.....	20,897	2,985	86,122	15,564
Coastwise-domestic—						
Crude oil	513,998	73,428	175,129	25,018	6,581,219	5,941,410
Fuel oil	208,216	29,745	163,287	23,327	4,743,833	5,651,910
Diesel and gas oil	54,508	7,787	22,354	3,193	1,238,031	898,534
Gasoline	732,649	104,664	207,869	29,696	8,088,584	8,003,016
Kerosene	.....	.....	5,605	801	187,945	145,113

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

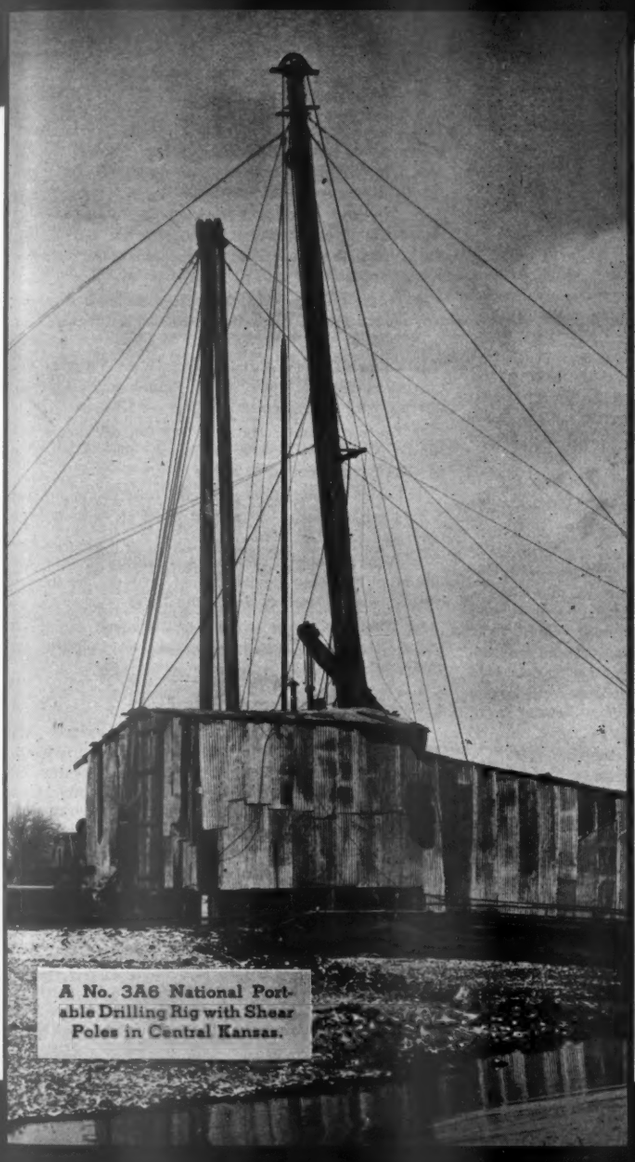
Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	124,055	.....
Diesel and gas oil	.....	.....	.....	.....	69,550	178,662
Gasoline	.....	.....	.....	.....	.....	9,499
Asphalt	.....	.....	.....	.....	280,447	346,862
Lubricants	.....	.....	.....	.....	14,182	13,665
Foreign exports—						
Crude oil	.....	.....	235,406	33,629	2,825,378	2,879,956
Fuel oil	31,648	4,521	46,178	6,597	1,613,367	1,060,946
Diesel and gas oil	22,147	3,164	20,146	2,878	1,228,485	1,156,390
Gasoline	.....	.....	40,145	5,735	1,522,900	3,152,549
Kerosene	.....	.....	20,611	2,944	366,647	449,603
Asphalt	.....	.....	.....	.....	42,968	56,258
Lubricants	.....	.....	20,197	2,885	306,990	202,282
Other finished oil	.....	.....	.....	.....	352	.....
Coastwise-domestic—						
Fuel oil	288,436	41,205	174,914	24,988	3,180,698	3,358,628
Diesel and gas oil	35,912	5,130	24,671	3,524	556,141	789,458
Gasoline	201,455	28,779	84,711	12,102	3,894,102	3,713,775
Kerosene	10,159	1,451	20,426	2,918	391,838	300,839

TOTAL TANKER SHIPMENTS FROM CALIFORNIA TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Crude oil	70,944	10,135	62,939	8,991	381,403	272,750
Fuel oil	60,870	8,696	81,898	11,700	1,358,578	.....
Diesel and gas oil	.....	.....	.....	.....	233,051	178,662
Gasoline	.....	.....	282,180	40,311	1,883,121	1,793,622
Kerosene	.....	.....	.....	.....	122,200	199,453
Asphalt	.....	.....	.....	.....	280,447	346,862
Lubricants	.....	.....	.....	.....	14,182	13,665
Foreign exports—						
Crude oil	286,454	40,922	656,755	93,822	10,672,253	15,729,174
Fuel oil	147,849	21,121	230,550	32,936	6,230,090	5,820,090
Diesel and gas oil	327,319	46,760	278,154	39,736	5,025,518	4,217,598
Gasoline	100,655	14,379	40,145	5,735	5,358,998	6,820,019
Kerosene	.....	.....	20,611	2,944	1,140,397	1,047,623
Asphalt	.....	.....	.....	.....	42,968	56,258
Lubricants	.....	.....	41,094	5,871	393,112	217,846
Other finished oil	.....	.....	.....	.....	352	.....
Coastwise-domestic—						
Crude oil	513,998	73,428	175,129	25,018	6,581,219	5,941,410
Fuel oil	496,652	70,950	338,201	48,314	7,924,531	9,010,538
Diesel and gas oil	90,420	12,917	47,025	6,718	1,794,172	1,687,992
Gasoline	934,104	133,443	292,580	41,797	11,982,686	11,716,791
Kerosene	10,159	1,451	26,031	3,719	579,783	445,952

NATIONAL *Portable* DRILLING RIGS

FOR MEDIUM AND HEAVY CABLE TOOL DRILLING



A No. 3A6 National Portable Drilling Rig with Shear Poles in Central Kansas.

FOR cable tool areas where moving is a problem and heavier tools are required, National Portable Drilling Rigs are especially economical. Made of convenient assemblies they are quickly trucked to the location and rigged up. Solid foundations add to stability and strength. For heavy strings of casing shear poles may be furnished. The National Cushioned Mast Top makes wire line spudding practical. Attachments for rotary drive are available.

NATIONAL PORTABLE DRILLING RIGS ARE MADE IN THREE SIZES

No. 2 —Rated capacity 2500 feet.
No. 2A —Rated capacity 3000 feet.
No. 3A6—Rated capacity 4000 feet.

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NATIONAL

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A complete No. 2A National Portable Drilling Rig on way to location in Michigan.

Eastern Field Report

By STAFF CORRESPONDENT

Deep Test in Beaver County Tops Onondaga at 5,000 Ft.

PITTSBURGH, Pa., July 17.—The deep test of Columbian Fuel Co. on the Abbie Linnenbrink and others lease in Rochester Township, Beaver County, Pennsylvania, topped the Onondaga at 5,000 ft. subject to correction after a steel-line measurement. With a surface elevation of 888.89 ft., this places that formation 4,111.11 ft. subsea. There was no apparent hard Tully present although this horizon may be placed after a more detailed study of the samples. The change to the Marcellus was gradual and in these shales there were 13 blowouts due to gas pockets.

Thirty-one operations were reported from the lower eastern fields, 5 dry, 14 gas wells and 12 producers with a daily initial of 129 bbl most of which was in southeast Ohio.

SOUTHEAST OHIO

The best producer was the test of Dillon McFrederick on the Timothy A. Daly farm in Section 2, Lagrange Township, Lorain County. Drilled in the Clinton sand to 2,246 ft. it produced 63 bbl. after shot.

In Athens County, Gross & Frebault Co. completed No. 7 N. W. Ridford, Lot 80, Athens Township, in the First Berea at 1,170 ft., showing as a small pumper.

In Knox County, H. E. Perkins completed a 50,000 cu. ft. gas well on the Roy Hunter farm in the northwest quarter Section 14, Union Township, in the Clinton sand at 2,870 ft. In the northwest quarter Section 23, same township, Ridgeway Brothers drilled on the Charles M. Kaylor farm through the Clinton sand to 2,985 ft. It was dry.

In Licking County, Allen Willey and others completed No. 3 Homer Van Wey, Section 19, Newton Township, in the Clinton sand, total depth 2,545 ft., gaging 370,000 cu. ft. In Mary Ann Township, Section 15, C. R. Settles completed a test on the Shannon heirs farm in the Berea sand at 665 ft. good for 10 bbl., pumping.

In Medina County, N.Y.O. Oil Co. completed No. 20 Thomas Brown, Jr., Section 16, Chatham Township, in the Berea grit at 435 ft., producing 6 bbl. after shot. No. 21 was completed on the same farm in the same formation at 400 ft. and produced 25 bbl. after shot. In Section 13, Chatham Township, Dymo Oil Corp. completed No. 21 W. H. Ripley and the Berea grit was shot to 332 ft. It made a good showing but will be used for water input well.

In Perry County, Marshall & Marshall completed No. 34 Donahue in the northwest quarter Section 14, Aurelius Township, in the Berea grit at 1,630 ft. It produced 2½ bbl. the first day after shot.

In Washington County, E. W. Cline completed No. 19-Coal Lands in the northeast quarter Section 21, Aurelius Township, in the Berea grit at 1,630 ft. It looks like a 4-bbl. pumper.

In Mahoning County, Tri State Gas Co. on the T. W. Baird farm in the northeast corner of Poland Township is drilling at 1,150 ft.

SOUTHWEST PENNSYLVANIA

One small producer was completed in Southwest Pennsylvania. In Washington County, Harry Williams & Co. completed No. 3 Jason Buchanan in South Franklin Township at 1,345 ft. with 2 bbl. at 973-77 ft.

In Allegheny County, Oliver Miller completed a test on the William McNeal farm in Hampton Township in the Speechley sand at 2,800 ft., a light gas well.

Armstrong County

In Cowanshannock Township, Armstrong County, L. F. Watson and others completed the Jacob Harkleroad test at 3,666 ft. in the Bradford sand with 1,243,000 cu. ft. of gas.

In Manor Township, John Wray and others completed the John Guthrie test at 3,413 ft. with 70,000 cu. ft.

In Cowanshannock Township, Ed Young and others are shut down at 2,035 ft. for boiler in the Wilda McCurdy test; Peoples Natural Gas Co. cemented to bypass tools in Jacob Wagner test; Peoples Natural Gas Co. is rigging up to deepen No. 1 Jacob Harkleroad; J. C. Sefton and others are drilling 800 ft. in the John Sowers test; Louden Drilling Co. is drilling 2,890 ft. in the R. H. Goldstrom test.

Indiana County

In Washington Township, Indiana County, T. W. Phillips Gas & Oil Co. completed No. 1 John Stuckell at 1,301 ft. with 97,000 ft. of gas at 1,225-29 ft. Their test on the H. B. Debendorfer was dry. In White Township, this company is drilling at 2,945 ft. on the Clarissa Fry farm and at 2,555 ft. on the B. R. & P. Coal Co. and in West Mahoning Township at 2,905 ft. on the Sarah Lewis farm. Dr. Mehan and others are drilling at 970 ft. on the Shields farm.

In Washington Township, Equitable Gas Co. is drilling at 2,800 ft. in the J. J. Potts test and at 400 ft. in the William Parks test.

Clarion-Westmoreland

In Porter Township, Clarion County, Apollo Gas Co. is gaging 40,000 cu. ft. at 2,105-09 ft. and has started drilling No. 4 Lou Emma Brinker.

In Westmoreland County, Peoples Natural Gas Co. is at 2,010 ft. deepening No. 1 George T. Crawford in Allegheny Township. In Fayette County, Nicholson Township, Duquesne Gas Co. has reached 2,120 ft. in No. 2 John P. Demaske.

Greene-Washington

In Amwell Township, Washington County, South Penn Oil Co., deepening No. 1 J. Q. Zimmerman, topped the Fifth sand at 2,991 ft. with oil at 3,001-03 ft. and is drilling at 3,010 ft. About 2,400 ft. of oil is in the casing.

In Greene County, Peoples Natural Gas Co. will deepen No. 1 Margaret Henderson in Wayne Township, No. 1 Frances Barger in Springhill Township, and No. 1 John Morris in Washington Township. In Washington Township, Equitable Gas Co. will deepen No. 1 Sarah J. Pipes. In Center Township, this company is drilling at 3,057 ft. in No. 2 Mrs. George Phillips.

In Center Township, H. W. Bissett is drilling at 3,211 ft., deepening No. 1 Maxwell Riggs.

Deep Tests

In Armstrong County, Peoples Natural Gas Co. is fishing casing in the deep test on the Lowry Martin farm in Wayne Township. After losing over 5,000 ft. of casing which fell 6,572 ft. to bottom the casing was shot at 5,800 ft. Over 30 joints have been recovered in addition to the 1,200 ft. hanging on the blocks.

On Chestnut Ridge, New Penn Development Co., William E. Snee and others are moving in on the Piedmont Coal Co. in North Union Township, Fayette County. In Concord Township, Butler County, South Penn Oil Co. is rigging up on the A. M. Fowler heirs farm.

WEST VIRGINIA

Three small producers were completed in West Virginia. In Ritchie County, Dye Farm Oil Co. completed No. 4 G. W. Dye, in Clay District, good for 4 bbl. a day.

In Wetzel County, J. Thomas McIntire completed a second test on the W. S. Lemasters farm in Proctor district, 3-bbl. producer.

In Wood County, Biddle & Gabbert completed the test on the E. E. Anderson farm in Williams district showing for ½ bbl.

Gas Wells

In Boone County, Pond Fork Oil & Gas Co. completed a fair gas well in No. 3 fee in Washington district. Hope Natural Gas Co. completed No. 7841 M. T. Miller, gaging 740,000 cu. ft.

In Braxton County, Pittsburgh & West Virginia Gas Co. No. 7682 T. Nottingham in Birch district was given two 30-qt. shots but there was not sufficient gas for test.

In Cabell County, C. J. Teubert completed a second test on his fee in Guyandotte district with 23,520 cu. ft. of gas at 478 ft.

In Gilmer County, Pittsburgh & West Virginia Gas Co. completed No. 7669 W. E. Simmons in Glenville district with 90,000 cu. ft. of gas at 1,936 ft.

In Lincoln County, Harmon Gas Co. completed the Harry P. Lovejoy test in Jefferson district at 3,560 ft. with 232,000 cu. ft. of gas.

In Logan County, Boone County Coal Co. completed No. 14 fee in Logan district at 3,194 ft. with 268,000 ft. of gas from the Berea.

In Mingo County, Virginian Gasoline & Oil Co. deepened No. 4443 Logan Cannel Coal Co. in Harvey district with 33,624 ft. from the lime.

In Ritchie County, Lucas & Mahoney completed the O. R. Taylor test in Clay district at 2,040 ft., gaging 184,000 cu. ft.

Oriskany Gas Field

No wells were completed in the Oriskany gas field in Kanawha County. Two new locations were made. In Poca district, South Penn Oil Co. has a location on the W. F. Monk farm, an offset to its Virginia Monk lease. In this district, Glenn Oil & Gas Co. will drill on the Laura Flowers farm, elevation 1,127.32 ft.

Deep Tests

In Jackson County, Joe Rubin and others are drilling at 4,100 ft. on the E. W. Brown farm in Ravenswood district. This operator is rigged up on the Gilbert Starr test.

In Pleasants County, Columbian Carbon Co. is cleaning out after cementing on the Hammat and others farm in Grant district on the Burning Springs anticline.

In Ripley district, Jackson County, Columbian Carbon Co. is fishing a lost bailer on the John F. Parsons farm at 1,001 ft. Everett Starcher and others are down 5,137 ft. on the D. M. Boggess farm and at 1,685 ft. on the Rosa Boggess farm and building rig on the Roy O. Pfost farm. In Washington district, United Carbon Co. is drilling at 4,987 ft. in No. 4 Elizabeth W. Perkins.

New Work

In Cabell County, R. H. Adkins, trustee, is spudding ithe G. G. Bledsoe test, Grant district, elevation 875 ft. In McComas district, this operator has a location on the B. L. Perry farm, elevation 740 ft.

In Gilmer County, McCall Drilling Co. has a location on the Robert Napier farm, DeKalb district, elevation 1,120 ft. In Logan County, Boone County Coal Co. will drill No. 15 fee in Logan district, elevation 1,545.59 ft.

In Wayne County, Clifford Mills and others have a location on the John B. Williamson farm, Union district, elevation 849 ft. R. H. Adkins, trustee, has a location for No. 1 C. W. Keck, same district, elevation 875 ft.

North and East Texas

By D. H. STORMONT

New Cooke County Oil Pool; Increased Wildcat Activity

WICHITA FALLS, Tex., July 17.—Discovery of an oil pool in Cooke County and added wildcat activity for Archer, Clay and Montague counties featured a busy week in North Texas.

In Cooke County J. M. and W. O. Russell and F. W. Lausen No. 1 Stark-Texas Christian University, W. A. Lynn Survey, 1¼ miles south of the Voth shallow Ellenburger pool, was completed for 109 bbl. daily, pumping, testing 30 gravity. Sand was drilled from 1,125 ft. to 1,143 ft., total depth.

The largest well for the Voth pool of northwestern Cooke County has been registered by J. G. Beard No. 2 Voth, N. Matson Survey. The Ellenburger pay was logged from 1,760 ft. to 1,774 ft., thickest in any well in the pool, and casing was set at 1,733 ft. When plug was drilled the gas pressure blew out the tools, followed with a flow estimated more than 100 bbl. in 30 minutes, without a show of water.

Archer County

Several new outposts have been staked in the Johnson extension area of the Hull-Silk pool of northern Archer County, where two weeks ago Bert Ligon completed his test on the Johnson lands for the largest well in the pool. First test was Phillips Petroleum Co. No. 1 Boss, in the southeast part of a 50-acre tract in Section 1, H.T.&B. Survey, Abstract 199, and a 660-ft. direct offset to No. 1 Johnson, the extension well. Continental Oil Co. will drill No. 1 L. F. Wilson, northwestern corner of Lot 4, Block 28, A.T.N.C.L. Survey, a direct south offset to the extension well.

Three-quarters mile west of No. 1 Johnson, Bert Ligon was drilling below 2,050 ft. in No. 1-A Moss, SW cor. Section 1, H.T.&B. Survey. Same operator's No. 1-B Moss, approximately ½ mile north and slightly west of the extension, was drilling below 2,145 ft.

In the northwestern part of the county showings of oil in the Caddo lime at E. P. Griffin No. 3 Waggoner, Section 1, Block 4, H.&T.C. Survey, were expected to give the Griffin pool its third producer. Show of oil was from 4,875 ft. to 4,879 ft. and drilling was suspended for a test. Regular pool pay is from 4,400 ft.

The new Caddo lime pool opened by British American Oil Co. in the northwestern part of Archer County was in line for a new test. No. 1 J. R. Parkey, Section 11, Block 3, H.&T.C. Survey, north offset to No. 1 Wilson, pool opener, completed for 888 bbl. from 4,600 ft.

Clay County

Clay County's active wildcats continued to draw attention as Frabor-Hodges and Mid-Union Drilling Co. No. 1 L. Kinder, previously thought a failure, logged deeper shows of oil. The test drilled a section from 5,493 ft. to 5,500 ft., possibly Caddo lime, and is shut down at 5,527 ft. for repairs. It is in Lot 11, Block 2, Clark & Plumb subdivision. L. T. (Bobby) Burns No. 1 Picket, W. W. Yearly Survey, Abstract 745, wildcat ½ mile north of the Burns pool discovery well, is drilling below 3,500 ft. Several other tests are in the drilling and testing stages.

Montague County

An active leasing program in Montague County following the discovery of the Burnett pool just outside Nocona, gives promise of four wildcat tests. The play has been centering around the town of Nocona and mainly in the wake of geophysical exploration by several major companies. First of the wildcat tests is S. J. Sackett and Continental Oil Co. No. 1 T. J. Brown, 5 miles southwest of Montague. Walter Gant has the drilling contract. Location is in the southeast 80 acres of Section 58, G. E. Nabours Survey, Abstract 1416.

Two miles northeast toward Montague, Daube Brothers, Joe Staley and Sinclair Prairie Oil Co. are credited with plans for a 5,000-ft. test in the NW SE Section 56. Southeast of Montague about a mile, T. M. Hausler and others are scheduled to test their acreage with a 5,000-ft. hole tentatively located on the P. J. Blackburn land in the S.A.&M.G. Survey. Farther southeast, toward Mallard, Tom Medders and others are reported preparing for a test tentatively located in the S. W. Heard tract in the SW¼ of Section 5, E.T. Survey.

A new deep outpost to the Burnett pool just outside of Nocona has been staked, Rogers & Rogers No. 2 J. E. Burnett, southeast corner of the J. M. Burnett lands, Jacob Lenow Survey, Abstract 433. Contract depth is 4,700 ft., 880 ft. southeast of the operators No. 1 Burnett.

Either a new pool or a deeper producing horizon in the Bonita pool 2½ miles northeast of Bonita was seen when Benton & Holmes No. 2 Bowers, northeast corner of the southwest quarter of Block 55, M.E.P.&P. Survey, drilled sand showing oil from 3,853-69 ft.

EASTERN TEXAS

DALLAS, Tex., July 17.—Abandonment of the only two active tests in the deep Opelika area of Henderson County, staking of a possible deep test on the west side of the Mexia field in Limestone County, and plans for the second recycling plant in Houston County's Grapeland gas-distillate area, led developments in eastern Texas.

Almost definite proof that the Opelika structure of northeastern Henderson County is primarily a gas-distillate producer was seen when Humble Oil & Refining Co., Tide Water Associated Oil Co. and Seaboard Oil Corp. abandoned both of the deep flank structure tests below 8,000 ft. No. 1 Scott, in the C. Robb Survey, 3 miles southwest of the discovery, was plugged when the company was unable to recover 4,000 ft. of drill stem lost at 8,972 ft. This test has been running about 400 ft. lower than wells in the field. The same operators' No. 1 Lewis, J. K. Stokes Survey, about 4,000 ft. northwest of production, was abandoned at 8,465 ft. when small gas-distillate shows proven insufficient. Failure of these wells is not known to affect the companies' plans to build a gasoline plant in the area where their two producing wells have a daily capacity of about 1,200 bbl. of distillate. It is estimated the companies have spent approximately 2½ million dollars in exploring the structure.

Limestone County

The new Mexia operation in Limestone County is Peyton Brothers No. 1 W. H. Harris, staked on a 40-acre tract in the P. Varrella Survey, reported to be a test of the Trinity sections. To the north in the same survey, Albert Baggett has spudded to 15 ft. and shut down at No. 1 Thompson.

Houston County

Initial steps toward the building of Houston County's Grapeland gas-distillate area's second recycling plant had been taken as the week closed. Condor Petroleum Co., Abilene, has staked the first of two or more wells to be drilled under a unitization plan, with the drill site being 300 ft. from the S and 1,100 ft. from the E lines of the J. M. Horne estate 40 acres, J. W. Parker Survey, Abstract 812. If oil is found, the proposed recycling plant to strip the distillate will be cancelled, but if distillate production is found major lease holders, including Stanolind, Phillips, Saltmount, Sun and Cities Service, will cooperatively construct the 20,000,000-ft. daily capacity plant at an approximate cost of $200,000.

Abandonments

Abandonment is reported for Hamm & Boggess No. 1 Ross, Rusk County wildcat test 3 miles northwest of Mount Enterprise, which failed to find the Woodbine sand to 3,830 ft. It was in the J. McCune Survey. Rains County's long-standing wildcat test, McKinley & Hastings No. 1 Taggert, 1 mile west of Emery, has been abandoned after drilling to only 720 ft. The Flag Lake field of Henderson County listed an abandonment with Richards & Holloway, Inc., plugging No. 2 Cities Service-Tarkington, Newell Survey, at 3,045 ft.

NORTH TEXAS COMPLETIONS

Archer County

Blackwell Oil & Gas Co. and Helmerich & Payne, Inc., No. 3 L. F. Wilson, 4,288-4,316 ft., 992 bbl. C. H. Staley and others No. 15 Anna Mangold, 3,781-3,857 ft., 544 bbl. Chambers & Hanks No. 1 R. D. Andrews, 905-07 ft., 21 bbl.

Baylor County

British American Oil Producing Co. No. 1 F. C. Green C, 2,608-21 ft., 150 bbl. Consolidated Oil Co. No. 1 F. C. Green, abandoned location.

Clay County

G. W. Cooper and others No. 4 T. P. Duncan, 1,204-14 ft., 15 bbl. Duncan and others No. 10 T. P. Duncan, 1,184-1,214 ft., 109 bbl. Duncan and others No. 13 T. P. Duncan, 1,184-1,210 ft., 84 bbl. Grace & Harwell No. 3 J. B. L. Hansard, 365 ft., dry. LeFevre and others No. 1 C. Snearly, 1,826 ft., dry. Jack Sory No. 1 Magnolia Petroleum Co., 315-330 ft., 10 bbl.

Cooke County

The Big Indian Oil & Development Co. No. 1 Joseph Weisman, abandoned location. C. & L. Oil Co. No. 1 J. J. Perkins, 871-79 ft., 104 bbl. K. R. March No. 1 Clifton, abandoned location.

Jack County

H. M. Tebay No. 3 E. F. Smith, 2,840-75 ft., 60 bbl. oil, 4,000,000 cu. ft. of gas.

Montague County

Loban and others No. 1 H. T. Payne, 2,340 ft., temporarily abandoned. Mullen & Weil No. 2 T. H. Hodges, 755-1,005 ft., 1,000,000 cu. ft. of gas. Seitz, Comegys & Seitz No. 1 J. T. Bright, 3,013 ft., dry.

Wichita County

J. Hammack No. 1 R. E. Carnes, abandoned location. Magnolia Petroleum Co. No. 146 H. Reilly, 805 ft., dry. J. Weilder No. 3 C. Birk, 288 ft., dry. Buffalo Oil Co. No. 12 W. P. Ferguson, 3,733-3,831 ft., 552 bbl. Buffalo Oil Co. No. 14 W. P. Ferguson, 3,700-3,822 ft., 1,320 bbl. Cochran & Cain No. 1 D. R. Preston, 3,853-4,003 ft., 67 bbl. Curtis & Caraway No. 4 Mrs. Julia James, 3,989 ft., dry. W. B. Hamilton No. 1 H. N. Martin D, 3,780-3,851 ft., 736 bbl. Melat & Graham No. 5 Munger A, 3,737-3,888 ft., 696 bbl. W. B. Omohundro No. 2 M. A. Love, 3,904-4,018 ft., 640 bbl. Panhandle Refining Co. No. 13 S. B. Burnett, 1,398-1,415 ft., 56 bbl. George Proctor No. 38 Ed Foster A, abandoned location.

Wilbarger County

Waggoner Refining Co. No. 26 W. T. Waggoner, 1,693-1,700 ft., 10 bbl.

Young County

F. A. Clarida and others No. 1 W. H. Clarida, 620 ft., dry. Nells Tidwell Strong No. 2 Grubbs, abandoned location. A. T. Strong No. 2 J. M. Smith, 100 ft., temporarily abandoned. A. T. Strong No. 4 J. M. Smith,

(Continued on Page 84)

Rocky Mountain Area

By
T. R. INGRAM

Deepest Test in Rockies Dry and Abandoned at 10,815 Ft.

DENVER, Colo., July 17.—The Continental Oil Co. and others deep test on the Divide Creek structure, Mesa County, which holds the depth and elevation records for the Rocky Mountain area, was plugged and abandoned at 10,815 ft. Another sand tested in Mountain Fuel Supply Co. No. 1 Kuykendall on Hiawatha dome is reported to have averaged 80 bbl. a day.

Deals looking to the consolidation of important producing properties in Lance Creek, in which the consideration is expected to be several million dollars, are reported near conclusion. Lance Creek had four completions, one dry in the Leo sand and another an important extension of the Sundance pool. Texas Co. deepened and recompleted an old well in the La Barge field for 50 bbl.

There were no completions or new operations in Montana.

NEW MEXICO

The Loco Hills pool in Eddy County continued to feature southeastern New Mexico activity, with the largest producer in the area to date finding rich pay and the field being extended 1½ miles.

Friendship Oil Co. No. 1 State, SE SE SW Section 36-17-29, flowed 332 bbl. of oil in 6 hours to rate as the biggest Loco Hills producer. The flow was made while 2-in. tubing was being run to 2,718 ft. The well was shut in at 2,754 ft., total depth in lime. It had main pay in sand at 2,733-47 ft., and was shot in that zone with 50 qt.

The original Loco Hills area was extended 1½ miles southwestward at Continental Oil Co. and Yates No. 1 Brainard, NE NE NW Section 11-18-19. At total depth of 2,701 ft., it swabbed 71 bbl. of oil in 2½ hours. It had first showings of oil and gas at 2,642 ft. The crew was cleaning out after shooting with 140 qt. at 2,642-2,671 ft.

Me-Tex Supply Co., Stroup & Yates No. 2 Yates, C NE SE Section 5-18-29, is a new location in the Loco Hills district. Same operators' No. 1 Yates, C SW SE Section 5-18-29, found main pay at 2,562-70 ft., and flowed small heads while drilling around 2,580 ft. in lime. It was shot at 2,555-2,600 ft. with 180 qt. and the crew was cleaning out. Total depth was 2,605 ft.

In the Lovington area, Lea County, Underwood & Sanders No. 1 Miller Permit, Section 5-18-29, was shot with 220 qts. at 2,560-2,610 ft., 10 ft. off bottom, and flowed about 240 bbl. of oil through casing in 24 hours. It wouldn't flow after 2-in. tubing was set at 2,600 ft., and swabbing unit was being rigged up.

Eleven wells were completed the past week, including a failure in Chaves County at Mac T. Anderson No. 1 Warnock, C SW SE Section 17-15-27, wildcat, 7 miles east of Lake Arthur. Sulfur water intruded at total depth of 1,936 ft. and it was abandoned.

In Eddy County, Grayburg Oil Co. No. 12 Burch, NW NW SE Section 19-17-30, was completed at 3,220 ft., total depth, flowing 175 bbl. of oil in 24 hours.

G. V. Price No. 2 Massie, SE SE NW Section 22-18-29, was reported dry at 3,082 ft., total depth, and plugging to abandon.

Lea County completions included Amerada Petroleum Corp. No. 2-LA State, C NE SW Section 1-17-36, Lovington pool. It flowed 492 bbl. of oil in 17 hours through ¼-in. choke on 2-in. tubing set at 4,855 ft. Gas gaged 375,000 cu. ft. daily. It topped pay at 4,667 ft., had best pay at 4,885-4,934 ft., and was bottomed at 4,944 ft.

Magnolia Petroleum Co. No. 36 State-Bridges, C NW NW Section 25-17-34, Vacuum pool, Lea County, topped lime pay at 4,399 ft., total depth 4,590 ft., and had natural flow of 376 bbl. of oil in 24 hours through ½-in. choke on 2-in. tubing set at 4,588 ft.

In the same pool, Drilling and Exploration Co. No. 1-O State, NE NW NE Section 34-17-34, found pay at 4,530 ft., and was bottomed at 4,641 ft. It flowed 205 bbl. of oil in 24 hours naturally through ¾-in. choke on 2-in. tubing set at 4,632 ft. Gas gaged 152,000 cu. ft. daily.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 Pajarita, Sec. 32-9n-1e. Drlg. below 1,450 ft.

San Juan County

Continental Oil Co. No. 93 Rattlesnake, C SW NW Section 1-29n-19w, Rattlesnake field, was completed in the Dakota at 854 ft. for 22 bbl. in 24 hours.

Continental Oil Co. No. 94 Rattlesnake, NW SW SE Sec. 2-29n-19w. Loc. (first report).
Angel Peak Oil Co. No. 8 Govt., C NE SW Sec. 13-28n-11w. Drlg. 580 ft.
Al Greer No. 2 Thompson, SW SE SW Sec. 10-30n-11w. S.D. 1,125 ft. for 6⅝-in. for W.S.O.
Wells & Noland No. 1 Govt., C NE NE Sec. 21-29n-11w. Drlg. below 80 ft.
Geo. Goodwin No. 1, NE NW NW Sec. 16-30n-11w. Drlg. sh. 1,350 ft.; H.F.W.

San Miguel County

Ben E. Keith No. 1 McCune, SW SE SW Sec. 32-16n-12e. S.D. 400 ft.; repairs.
Southwest Drlg. Co. No. 1 Conchas, NW NE Sec. 34-17n-21e. T.D. 2,100 ft.; fsg.

Torrance County

Drice Co. No. 1 Garland, NE SE Sec. 32-7n-7e. Drlg 1,990 ft.; 5⅛-in. at 1,965 ft.

Valencia County

C. A. Grober et al No. 1 Fuqua, NE NE Sec. 19-5n-3e. Cmtd. 8¼-in. at 2,295 ft.; W.O.C.
Joiner Oil Corp. No. 1 San Clement, C NE SE Sec. 23-7n-7e. T.D. 5,606 ft.; set whpstk.; drlg. by D.P.

COLORADO

Boulder County

J. A. Warren No. 3 Maxwell, NW NE NW Sec. 24-1n-17w. Drlg. 435 ft.
Reynolds & Rohr No. 1 Thomas, SW SW Sec. 17-1n-70w. S.D.O. 2,138 ft.; will D.D. under management of Reynolds.

Fremont County

T. E. Maloney No. 1, SE NW Sec. 34-19s-69w, T.D. 810 ft.; str. cr. hole.
Waterville Oil Co. No. 2 Persons, CWL NE NE Sec. 17-19s-69w. T.D. 125 ft.; fsg.

Garfield County

Roaring Fork Oil Co. No. 1 Patterson. C NE Sec. 36-7s-88w. S.D.O. 2,574 ft.

Huerfano County

J. W. Tomkins & Sons No. 2 George, SE SE SE Sec. 3-29s-69w. S.D. 890 ft.
S. W. Pressey No. 3 Campbell, NW NW NW Sec. 11-29s-69w. Drlg. 280 ft.
E. J. Dunigan No. 1 Campbell, SW NW Sec. 2-29s-69w. Drlg. 390 ft.
Ira E. Miller No. 1 Hamilton, SE SE NW Sec. 20-29s-67w. Drlg. 890 ft.

Jackson County

W. N. W. Corp. No. 1 North Park Coal Co., NW NW Sec. 18-9n-78w. T.D. 4,100 ft.; U.R. 8¼-in.

La Plata County

Nick Splatter No. 1-X Bryce, C SW SW Sec. 32-33n-9w. S.D. 2,352 ft.

Moffat County

Mountain Fuel Supply Co. No. 1 Kuykendall, NE NE SE Section 22-12n-100w, Hiawatha field, an old gas well completed in 1928 at 2,025 ft. for 37,000,00 cu. ft., and deepened last fall for oil test through perforated casing, is reported to have tested another sand which averaged 80 bbl. per day on a pumping test. The sand tested last fall was at 2,472-83 ft. and averaged 85 bbl. per day for 60 days. Recently casing was perforated higher up and 80 bbl. per day was reported shown, making a total of 165 bbl. per day from the two horizons.

Stanolind O. & G. Co. No. 34-SD Parkinson, SW SE SW Sec. 22-4n-92w. T.D. 3,296 ft.; killing to D.D.
Cooperative O. & G. Co. No. 1 Gossard, CWL E½ E½ Sec. 29-5n-93w. Spd. and S.D. to comp. R.U.
Steamboat Springs Synd. No. 1 Sutton, NE NE SW Sec. 1-5n-96w. T.D. 1,535 ft.; rng. 6¼-in. cave string. (formerly C. R. Privett.)
J. S. Warner No. 1 Baker, NE NE SW Sec. 35-5n-96w. Drlg. 200 ft. in Brown's Park form.

Park County

South Park Oil Co. No. 1 Lemar, NE NE SE Sec. 34-11s-75w. T.D. 6,975 ft.; rec. baller and drlg. ahead; swbg. 8 to 10 B.P.D. and fills up over night.

Pueblo County

Eden O. & G. Co. No. 1 Horse Creek Ld. & Cattle, SW SE Sec. 29-19s-64w. S.D. 2,185 ft.

Rio Blanco County

Texas Co.-California Co. No. 2 Unit, NW SE SW Sec. 27-3n-94w. Drlg. 4,731 ft.
Buford Oil Co. No. 1 Govt. C SW SW Sec. 16-1n-91w. T.D. 3,645 ft.; M.I. 6¼-in. to res.

Routt County

L. C. Craig & L. C. Moore No. 1-X Irwin, C SW NE Sec. 33-7n-85w. Res. at 1,050 ft.

WYOMING

Big Horn County

Ohio Oil Co. No. 1 Syverson, Sec. 34-54n-93w (SE SW NW Lot 53). Drlg. 3,654 ft.
Frank S. Scott No. 1 Robertson, SE SE SE Sec. 6-54n-93w. Drlg. 417 ft.
Mule Creek Oil Co. No. 1 Sessions, Lot 53 (NW NW) Sec. 34-56n-97w. T.D. 4,105 ft.; 7-in. cmtd. on top Madison at 4,091 ft.; swbd. 8 B.P.H.; prep. to acid; Tensleep 3,420-3,540 ft.
Libby-Keoughan No. 1 Sheets, SE NE SE Sec. 9-55n-96w. T.D. 3,930 ft.; U.R. 6¼-in. from 3,820 ft.
A. L. Rankin No. 1 Karjala-Rankin, C SW NW Sec. 10-54n-94w. T.D. 790 ft.; M.I. 6⅝-in. to set on bttm. for W.S.O.; T. Embar 180 ft.; Tensleep 481 ft.; Amsden 755 ft.

Carbon County

Sinclair-Wyoming Oil Co. No. 13 Wertz, NE NW NW Sec. 7-26n-89w. T.D. 3,923 ft. in Tensleep sd.; top 3,918 ft.; rng. 7-in.
Producers Oil Co. No. 1 Lake Valley, CNL Sec. 14-20n-88w. Drlg. gr. sh. 2,550 ft.; carrying 10-in. at 2,485 ft.

Converse County

New Era Fuel Co. No. 1 Simonson, NW NE SE Sec. 16-32n-68w. S.D. 715 ft.
Wyshawn Oil Co. No. 2 Lindley, C SW SW Sec. 35-32n-69w. Drlg. below 2,693 ft.
W. W. Austin et al No. 1 Pfister, SW NE NW Sec. 20-32n-68w. T.D. 713 ft.; cmtd. 5½-in. at 710 ft.; S.G. in sdy. sh. 710-13 ft.
New Era Fuel Co. No. 2 Gasper, CNL NW SW Sec. 25-32n-69w. Cg. 750 ft.
New Era Fuel Co. No. 1 Pestal, SE NE NE Sec. 32-32n-69w. C.O. 420 ft. to run 8¼-in. (formerly Fred Bunker).
U. & S. Oil Synd. No. 1 Beaver, SE NW Sec. 29-35n-68w. M.I.C.T. for test on Walker Creek (first report).

Fremont County

Sinclair-Wyoming Oil Co. No. 11, CSL NE NE Sec. 15-32n-95w. T.D. 709 ft.; cmtd. 10¾-in. 708 ft.
Hall & Olinger No. 5 Govt., NW NE Sec. 33-38n-93w. S.D. 254 ft.
Lincoln O. & G. Co. No. 5 Tribal, C SW SE Sec. 23-1s-1e. Drlg. 919 ft.
Pilot Oil Co. No. 8 Hoffman, C SW SW Sec. 22-3n-1w. Drlg. gr. sh. 650 ft.
Consolidated Oil Properties No. 3 Ewart, C SW SE Sec. 16-1n-1w. T.D. 1,245 ft.; U.R. 6⅝-in. at 1,000 ft.
Frank Pouppirt No. 2 Fidelity Tr., NW NW SW Sec. 27-3n-1w. T.D. 1,200 ft.; C.O. to res.

Hot Springs County

Phebus Oil Co. No. 2 Govt., NW SW SW Sec. 11-44n-98w. T.D. 1,100 ft.; swdg. out kink in 12½-in. joint.
John W. Selby No. 1 Kyne, SW NW Sec. 22-43n-92w. M.I.C.T., Kirby Creek. (first report).

Lincoln County

H. C. Harris et al No. 1 Govt., SE NW NW Sec. 23-21n-117w. T.D. 1,916 ft.; rng. 8⅝-in. to bttm.

Natrona County

Connelly Drlg. Co. No. 1 State, SW SW NW Sec. 36-36n-81w. T.D. 1,268 ft.; M.I. 10-in.
General Pet. Corp. No. 1 Govt., C NW SE Sec. 21-35n-77w. T.D. 8,511 ft.; P.B. to 7,974 ft.; prep. to cut and pull 6⅝-in. from 7,974 ft. and redrill from 8⅝-in. csg. point in new hole for recompletion in Lakota.
Summit Oil Co. No. 2 Govt., NW NE NE Sec. 21-33n-80w. T.D. 550 ft.; U.R. 8¼-in.

Niobrara County

Lance Creek had four completions, one dry and the other an important extension of the Sundance pool, Continental Oil Co. No. 6 Rodeo-4, NW NW NE Sction 35-36n-65w, a diagonal offset on the northwest to Ohio Oil Co. No. 1 Leo-7, recently was recompleted as a Sundance well after plugging off the Minnelusa, and more than a mile east of the nearest producer in that horizon. The Continental well was completed at 4,090 ft. from the basal Sundance topped at 4,075 ft., and made 380 bbl. initial.

Continental Oil Co. No. 15 Tom Bell, C SW SW Section

THE *Deeper* THE WELL
THE *Greater* THE NEED
FOR
Pittsburgh Special CASING

When success depends on that *extra* margin of safety, *two* PLUS factors make *Pittsburgh Special* Casing a stand-out in any field. (1) The Double Seal of accurate threads and extra gripping shoulder and (2) *Pittsburgh's* exclusive hydrostatic testing under TENSION to match field conditions, give you these plus factors. It makes up perfectly, runs in quickly, reaches bottom safely and passes the pressure test readily. Still other advantages of *Pittsburgh Special* Casing are extra clearance (with thin wall alloy steel coupling), greater joint strength, fool proof stabbing and fast make up. You can depend on *Pittsburgh Special* Casing for the successful completion of deep wells everywhere. For further information ask for Bulletin No. 310.

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....with the FAST-RUNNING DOUBLE-SEAL JOINT....

THERE IS NOTHING EQUAL TO SEAMLESS

34-36n-65w, found water in the Leo sand, top at 5,543 ft., and continued to the Bell sand, which was dry, at a total depth of 5,923 ft., and was plugged.

Minnelusa Oil Corp. No. 1 Marline (Hewitt) NW SW SW Section 4-35n-65w, an outside well on the southeast side, was completed at 5,547 ft. from the Leo sand topped at 5,487 ft. It flowed 26 bbl. an hour through a 24/64-in. tubing choke and was given a rating of 510 bbl. a day. It is one-fourth mile out from a producer.

Ohio Oil Co. No. 11 Carrie Putnam, SE SE SW Section 33-36n-65w, was completed in the Leo at 5,299 ft. after plugging back from 5,399 ft. After treating with 1,000 gal., it swabbed 78 bbl. in 2 hours. Last report it was swabbing 175 bbl. per day.

There were no new operations.

Holly Dev. Co.-A. B. Cobb No. 4 Novick, SE SE SW Sec. 6-35n-65w. Drlg 4,490 ft.; top r.b. 4,057 ft.
Ohio Oil Co. No. 3 Cash-1, SW NW SW Sec. 4-35n-65w. Drk.; W.O. equip.
Ohio Oil Co. No. 12 Elizabeth Lamb-Acct. 2, NE SE SE Sec. 5-35n-65w. Drlg. 2,997 ft.
Continental Oil Co. No. 4 Apex O.P.C.-3, NW NE SW Sec. 34-36n-65w. T.D. 4,073 ft.; top sat. 4,049; cmtd. 8⅝-in. at 4,045 ft.; W.O.C.
Continental Oil Co. No. 3-B Dielman, SW SE NW Sec. 8-35n-65w. T.D. 5,698 ft.; P.B. to 5,565 ft.; prep. to install pmp.
Continental Oil Co. No. 16 Tom Bell Cattle, NW SW SW Sec. 34-36n-65w. T. D. 3,987 ft.; top basal Sundance 3,951 ft.; 6⅝-in. at 3,948 ft.; W.O.C.
Argo Oil Corp. No. 1 U. S.-40, NW NW SW Sec. 8-35n-65w. Drlg. 4,058 ft.
Continental Oil Co. No. 4 Apex O.P.C.-4, SE SE NW Sec. 35-36n-65w. T.D. 4,304 ft.; cmtd. 8⅝-in. 4,254 ft.
F. F. Hintze et al No. 1 Wright-Govt., C NW SE Sec. 30-36n-63w. T.D. 4,964 ft.; cmtd. 7-in. at 4,617 ft. and S.D.
Fall River Roy. & Prod. Co. No. 1 Govt., CSL SE SE Sec. 35-40n-61w. Drlg. 1,750 ft.; 10-in. cmtd. 1,730 ft. for W.S.O.
Continental Oil Co. No. 10 Otto Rohlff, SW SW SE Sec. 31-36n-65w. Drlg. 1,862 ft.

Park County

Dry Creek Oil Co. No. 1 State, C NE NW Sec. 16-50n-100w. T.D. 1,280 ft.; T. Frontier 1,270 ft.; cmtd. 8⅛-in.; W.O.C.

Sublette County

Texas Co. No. 6-L, SE SE SW Section 34-27n-113w, La Barge field, an old well deepened, was completed at 785 ft. and pumped 50 bbl. in 24 hours.

J. C. Anderson Drlg. Co. No. 1, W½ NE Sec. 30-30n-111w. Bldg. rig; C.T. test to 2,000 ft.
California Co. No. 1 Unit 1, C SW NE Sec. 14-31n-109w. T.D. 6,683 ft.; cmtd. 9⅝-in. at 6,675 ft.
Wyo. Pet. Corp. No. 1 Budd, C NE NE Sec. 10-29n-113w. Drlg. 2,200 ft.
Texas Co.-Frontier Pet. Co. No. 1 Govt. Unit, SE SE SW Sec. 1-28n-114w. T.D. 8,194 ft.; P.B. and tstg.
Yellowstone Oil Co. No. 1 Budd, C SE SE Sec. 6-30n-112w. T.D. 450 ft.; 12½-in. at 428 ft.

Sweetwater County

Mountain Fuel Supply Co. No. 1 Clark, NW SE SW Sec. 12-19n-104w. T.D. 2,573 ft.; R.U.R.
Mountain Fuel Supply Co. No. 1 Stone, C SW SW Sec. 18-19n-103w. S.D.O. 4,546 ft.; perf. a 4,000-3,660 ft.; wtr.; prob. abd.
Sinclair-Wyoming Oil Co. No. 84-A, SW NW NW Sec. 11-26n-90w. T.D. 1,568 ft.; R.U.C.T. to drill in.
Sinclair-Wyoming Oil Co. No. 85-A, SE SW SE Sec. 16-26n-90w. Loc. (first report).

Uinta County

Spring Valley Pet. Co. No. 13, CSL SE SE Sec. 22-15n-117w. R.U. to D.D. from 1,726 ft.; O.W.D.D.

Weston County

Bruce C. Teeters No. 1 State, SW SW SE Sec. 36-42n-61w. M.I.C.T. (cor. loc.).
Dornacher & Neiman No. 1 Neiman, NW NW NW Sec. 6-47n-64w. Drlg. 300 ft.
Lem Johnston No. 1 NW SW Sec. 24-44n-63w. Drlg. 3,305 ft.
John Brorphy No. 1 George, SW SE NW Sec. 12-48n-64w. Drlg. below 2,430 ft.
F. P. Diiger et al No. 4 Ost. CNL NE NE Sec. 25-46n-64w. Cg. in Sundance below 2,300 ft.
Hunter & Satterlee No. 1 Draper, NW NW NW Sec. 10-46n-63w. S.D. 160 ft. (C.D.) for repairs.
Kroker et al No. 2 CNL NE NW Sec. 31-47n-63w. T.D. 375 ft.; W.O. new mch. to D.D.
Updike Co. No. 7, NW NW SW Sec. 25-46n-64w. Cmtd. 8¼-in. at 700 ft.; W.O.C.
Federal Oil Co. No. 9, CNL SE SE Sec. 15-46n-64w. Drlg. in sat. sd. topped at 2,130 ft.

MONTANA

Blaine County

Walter Drought et al No. 1 Stam, CSL SW SE Sec. 10-31n-18e. T.D. 1,065 ft.; S.G.; rng. csg. to top Eagle sd.

Carbon County

R. R. Tarrant No. 2 McKay, C SE NW Sec. 4-6s-18e. Drlg. 2,120 ft.
Alex Beaton No. 1, CSL SE SE Sec. 23-6n-23e. Drlg. 1,600 ft. in 8½-in. hole.
V. M. Kirk No. 1 Robinson, SW SW NW Sec. 2-7s-21e. Res. at 2,021 ft.
Miracle Oil Co. No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,381 ft.; fsg.; tools at 1,600 ft.

Fallon County

Montana-Dakota Utilities Co. No. 137 Govt. Unit 7, NE SW SW Sec. 10-6n-60e. Drlg. 670 ft. in Bearpaw; 10¾-in. at 104 ft.

Glacier County

There were no completions or new operations in Cut Bank. Olive Oil Co. No. 5 Winkler, NE cor. Section 35-35n-6w, had 4,500,000 cu. ft. of gas in the Sunburst sand at 2,715-45 ft. The upper Cut Bank was at 2,760-78 ft., and lower sand at 2,778-90 ft., total depth, 2,863 ft. Gas increased to 5,000,000 cu. ft.

Santa Rita O. & G. Co. No. 1 Miller, CWL SW NE Sec. 29-33n-5w. Drlg. 930 ft.; Colo. 680 ft.; 10¾-in. 691 ft.
A. R. Pardue No. 3 Tribal-171, NW SE SW Sec. 7-32n-5w. B.R.
Glacier Prod. Co. No. 2 Hall, C NE SW Sec. 35-36n-6w. Spdg. 395 ft.
Cobb-Reagen No. 4 Jackson, SW SW NE Sec. 5-32n-5w. Spdg.
Glacier Prod. Co. No. 1 Hendrickson, C NW NE Sec. 28-33n-5w. Drlg. 1,675 ft.
Kistner-Watson No. 2 Britton, SW SE SE Sec. 14-34n-5w. Drlg. 270 ft.
Huber-Montana Co. No. 1 Krueger, CWL SW SE Sec. 11-37-5w. Drlg. 2,583 ft. in red and gr. sh.; Moulton sd. at 2,494-2,530 ft. dry.
Texas Co. No. 4 Curran, C NE NE Sec. 8-32n-5w. Drlg. 2,475 ft
Texas Co. No. 4 State, C NW NW Sec. 16-32n-5w. Drlg. 2,030 ft.
Santa Rita O. & G. Co. No. 2 Stahl, C NW SW Sec. 21-35n-5w. Drlg. 2,860 ft.
Par Oil Co. No. 2 Tribal-170, SW NE SW Sec. 7-32n-5w. Spdg. 400 ft.
Glacier Prod Co. No. 1 Jaeger, C NW NW Sec. 15-32n-5w. Drlg. 2,380 ft.
R. C. Tarrant No. 8 Getty, CWL NW SE Sec. 15-34n-6w. Drlg. 2,725 ft.
R. C. Tarrant No. 3 Yunck, SW SW NW Sec. 12-34n-6w. Drlg. 1,790 ft.
A. B. Cobb No. 1 Vargo, C SE NE Sec. 19-37n-4w. Drlg. green. sh. 2,715 ft.; S.O. in Moulton 2,600-25 ft.; Sunburst 2,660-80 ft.; 6,500,000 cu. ft. gas at 2,670-80 ft.

Meagher County

Dan Drumheller No. 1 Moss Agate, SW SE NE Sec. 25-7n-7e. Drlg. 960 ft.

Teton County

R. C. Tarrant No. 1 Hoeschen, NE SE Sec. 34-27n-5w. R.O.G.

Toole County

G. M. Plotke No. 3 Ward, CWL SW SW Sec. 28-35n-3w. R.U.; (first report).
Coolidge & Coolidge No. 1 Forseth, CWL SW SW Sec. 8-35n-2e. R.U.; (cor. loc.).
Texas Co. No. 8 Swears, CEL SE Sec. 9-35n-2w. Drlg. 1,475 ft.
Big West Oil Co. No. 10 Dahlquist, CNL SW SE Sec. 21-35n-3w. T.D. 1,765 ft.; contact 1,750 ft.; good S.O. in break at 1,763-65 ft.; pulling 8¼-in.
Art Crabtree No. 1 Thompson, NE SE NW Sec. 35-35n-2w. T.D. 1,495 ft.; contact at 1,477 ft. dry; S.O. at 1,483-87 ft.; some W. at 1,490-93 ft.; drlg. ahead.
R. G. Parrant No. 1 Holbrook, C NW NE Sec. 2-36n-3w. S.D. 160 ft.
Ramona Oil Co. No. 3 Govt., CWL NE NW Sec. 12-35n-3w. S.D. 1,563 ft.; Sunburst 1,545-63 ft.; 60 ft. O.I.H.; will D.D.
Huso Bros. No. 1 Elingson, C NE SW Sec. 14-35n-3w. Drlg. 1,310 ft.
Fulton Pet. Co. No. 3 Thompson, SE NE NW Sec. 28-35n-3w. T.D. 1,740 ft.; contact 1,735 ft.; good S.O. acd. 1,000 gal.; tstg.
Pfabe & Engleking No. 3 Hurley, near C NW NE Sec. 8-34n-2w. T.D. 1,463 ft.; contact 1,455 ft.; wtr.; P.B. to 1,460 ft.
Superior Pet. Co. No. 8-A Govt., CEL NW NE Sec. 12-35n-3w. Drlg. 1,720 ft.
Fulton-Commonwealth No. 2 Thompson, SE NE SE Sec. 28-35n-3w. S.I. at 1,728 ft.
W. M. Cassidy No. 1 Phoenix, CNL NW NW Sec. 28-35n-4w. S.D. after D.D. into sat. Mad. L. at 2,325-58 ft.

Yellowstone County

Nelson Story-Hogan, Ltd., No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; R.U. to res.; (formerly Signal O. & G. Co.)
Riverton Oil Co. No. 1 Fox, CEL NW NE Sec. 14-2n-23e. Res.; T.D. 1,975 ft.; U.R. 8¼-in. from 1,900 ft. to bttm.

UTAH

Box Elder County

Northern Oil Co. No. 1, C NE SW Sec. 17-13n-4w. Drlg. 125 ft.; prep. to run 20-in.

Grand County

Cane Creek Oil Co. No. 1 Govt., NW SW Sec. 31-26n-21e. T.D. 3,180 ft.; 6⅝-in. cmtd. 3,135 ft.; drlg. plug.

Summit County

Longwell Pet. Co. No. 1, SE SW SE Sec. 35-3n-5e. Res. at 2,876 ft.; drlg. 2,965 ft.

Oklahoma Fields

(Continued from Page 68)

Osage County

Sinclair Prairie Oil Co. No. 12 Osage, NE NW NW Section 26-24-10, West Barnsdall area, Osage County, found Bartlesville sand at 1,770-1,826 ft., total depth, was shot and pumped 50 bbl. of oil daily.

Same company's No. 11 Osage, SE NW NW Section 22-25-6, South Burbank district, had sand at 2,558 ft., total depth 2,803 ft., was shot and pumped 20 bbl. of oil daily.

In the Pawhuska district, Landon No. 5 Osage, SW NE SE Section 17-25-9, an old well, was deepened from 1,882 ft. to 1,949 ft., shot, pumped 65 bbl. of oil in 24 hours and was recompleted.

The second well was completed in the new sand pool recently opened in northeastern Osage County. It was Charles Petroleum Co. No. 2 Osage, SE NW NW Section 10-28-11. Peru sand was topped at 928 ft., total depth 977 ft., and it flowed 130 bbl. of oil in 24 hours after a shot.

Ray Branstetter No. 1 Osage, NW NE NE Section 32-22-11, had Cleveland sand at 879-924 ft., total depth, was shot and pumped 25 bbl. of oil daily.

Barnsdall Oil Co. No. 11 Osage, SE SW SW Section 23-24-10, West Barnsdall area, found Bartlesville sand at 1,722-70 ft., total depth, was shot and completed for 48 bbl. of oil daily.

Peters Petroleum Co. No. 1 McKinley, NE NW Section 31-22-9, was dry and abandoned at 543 ft., total depth.

Logan-Payne Counties

Sinclair Prairie Oil Co. No. 3 Crews, SE NW NE Section 27-16-1e, Meridian pool, Logan County, found Wilcox sand at 5,142 ft., total depth 5,190 ft., and flowed 430 bbl. of oil in 24 hours.

Deep Rock Oil Corp. No. 7 Echo, SW NE NE Section 9-18-5, West Norfolk area, Payne County, had first Wilcox sand at 3,570 ft., second Wilcox sand 3,587-3,620 ft., total depth, was shot and swabbed and flowed 73 bbl. of oil in 24 hours. Ross No. 1 Linsenmeyer, SE SW Section 3-18-4e, Payne County, had dug cellar and pits.

In Pawnee County, Greer No. 1-A Ruble, NE NW NW Section 7-20-8, was rigging up machine, and Johnson No. 8 Findley, NE NW NE Section 28-20-9, was drilling below 290 ft.

Southwestern Oklahoma

Two small producers were completed in the Lawton area, Comanche County. Truitt No. 11 fee, NE SW SE Section 26-2n-11w, had sand at 195-215 ft., total depth 222 ft., and pumped 12 bbl. in 24 hours.

Same operator's No. 12 fee, NE SW SE Section 26-2n-11w, found sands at 194 ft. and 224 ft., total depth 232 ft., and pumped 14 bbl. of oil in 24 hours.

In the Tipton area, Jackson County, Fish No. 3 Mattie, SW SE NW Section 5-1s-19w, was bottomed at 2,687 ft., plugged back to 2,650 ft., ripped casing and pumped 12 bbl. of oil in 24 hours.

In the Altus field, Jackson County, Gulf Oil Corp No. 5 Byrd, NE NW NW Section 14-1n-20w, had a hole full of water and was abandoned at 1,737 ft., total depth.

Gulf Coast Fields

(Continued from Page 62)

Co. No. 3 Henrichs, sand 5,589-5,600 ft., 12 bbl., ¼-in. choke. Shell Oil Co., Inc., No. 5 Rudel, sand 5,565-80 ft., 505 bbl., ¼-in. choke.

Jackson County

Cordele field: H. J. Porter No. 2-B Durshel, 2,749 ft., 74 bbl., ⅛-in. choke. Francitas field: Crosby Drilling Co. No. 1 Hale and Alee, 8,804 ft., abandoned. Mills Bennett Production Co. No. 1 Lowrance, perforated casing 8,575-8,640 ft., 57 bbl. distillate, 5/32-in. choke. West Ranch field: Lonnie Glasscock No. 2 Drummond, 5,547 ft., 131 bbl., 9/64-in. choke.

Liberty County

Hull field: Guinn Crude Oil Co. No. 16 Abel, sand 564-69 ft., 14 bbl., pumping.

Matagorda County

Citrus Grove field: Continental Oil Co. No. 1 Savage, perforated casing 4,132-42 ft., 1,500,000 cu. ft. of gas.

Orange County

Orange field: Gulf Oil Corp. No. 10-A Winfree, perforated casing 5,621-30 ft., 232 bbl., $\frac{7}{32}$-in. choke.

Polk County

Segno field: Gulf Oil Corp. No. 17 Wing, sand 8,060-90 ft., 622 bbl., ¼-in. choke.

Wharton County

Louise field: Pure Oil Co. No. 2 Lancaster, 5,155 ft., 82 bbl., 13 hours, 10/64-in. choke. Magnet field: Humble Oil & Refining Co. No. 16 Cockburn, sand 5,535-45 ft., 260 bbl., ¼-in. choke. Texas Co. No. 12 Broussard, sand 5,544 ft., 76 bbl., ⅛-in. choke.

British Columbia Dealers Appeal Gasoline Case

VANCOUVER, B. C.—Following the decision of the British Columbia Appeal Court sustaining the right of the provincial government to fix gasoline prices in the province, gasoline dealers have decided to appeal the case to the Supreme Court of Canada, which will sit next October.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ont., July 15.—Effective July 8, the Petroleum and Natural Gas Conservation Board of Alberta issued a new schedule of allowables for Turner Valley. While the total remains at 27,000 bbl. a day, the average allowable per well is reduced from 355 bbl., effective June 13, to 346 bbl. under the new order. Changes and readjustments to individual well quotas are due to new completions, bringing the total of crude producers to 78, and to changes in gas-oil ratios and bottom-hole pressures as shown by recent official tests.

Under the new schedule, Home Oil Co. No. 2 Millarville, North Turner Valley, is still the largest producer with 939 bbl. as against 999 bbl. previously. Other major producers are: Vulcan Brown Petroleums No. 1, 823 bbl.; Royalite Oil Co. No. 38, 788 bbl.; Frontier Royalties No. 1, 784 bbl.; Royalite No. 36, 764 bbl.; Royalite No. 30, 751 bbl.; Royal-Canadian No. 2, 721 bbl., and Commoil No. 1, 712 bbl.

In West Central Turner Valley, East Crest Oil Co. No. 6, LSD 8, Section 6-19-2w5, finished at 8,040 ft., was given temporary allowable of 125 bbl. York Oils No. 2, LSD 6, Section 20-18-2w5, finished at 8,026 ft., has temporary allowable of 250 bbl.

In Section 32-18-2w5, George Harris and associates No. 2, LSD 15, finished at 7,565 ft., was acidized with 2,000 gal. It flowed 990 bbl. a day through 1-in. choke, and has been given allowable of 600 bbl. Oil Ventures No. 1, LSD 14, bottoming in the black lime at 7,807 ft., was acidized with 8,000 gal. but failed to respond owing to fractures in the upper lime. Allowable has been set at 401 bbl.

In the same section, British Colonial Oils No. 1, LSD 5, finished at 8,364 ft., was acidized and developed a flush estimated 250 bbl. an hour, settling to 75 bbl. Test through 1-in. choke showed 1,020 bbl. a day with gas-oil ratio of 1,230 ft. and 1,800 lb. bottom-hole pressure, tests being made by Dr. B. B. Boatright. Temporary allowable had been set at 400 bbl., which was increased to 765 bbl., making the well one of the major producers.

In Section 17-18-2w5, Anglo-Canadian Oil Co. No. 4, LSD 6, is below 7,939 ft. after getting the lime at 7,855 ft.

In Section 16-18-2w5, Okalta Oil Co. No. 8, LSD 6, finished in the lime at 7,102 ft., with temporary allowable of 225 bbl. a day, has been reacidized and is testing for official quota.

West of the main field, Scottish Petroleums No. 1, LSD 16, Section 19-18-2w5, is resuming after getting the Madison at 8,530 ft. and cementing 15 ft. in. The well is lower on structure than any previous crude producer, but about 1,200 ft. higher than Okalta Oil Co. No. 6, farther west, which got water in the lower porous horizon of the lime. If productive, it will extend the field ½ mile to the southwest.

In North Turner Valley, arrangements have been closed by Phillips Petroleums, Ltd., of Calgary with Anglo-Canadian Oil Co. for development of 400 acres, southwest of the Royalite and Model wells. No. 1 is to be started within 60 days; tentative location in LSD 14, Section 15-20-3w5. No. 2 will be drilled in LSD 13, same section, starting in 90 days. Anglo-Canadian has an option to drill additional wells at 90-day intervals, the Phillips interests having 10 per cent gross and a net royalty interest in all wells on the 400 acres.

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Yoakum County Extensions; Northern Allowable Raised

By
D. H. STORMONT

FORT WORTH, Tex., July 17.—Wells completed or in the testing stages between the Wasson-Denver pool and the Bennett pool of Yoakum County, with the first processing of crude at the new refinery at Levelland in Hockley County, and an increase in field allowables of several northern basin fields to furnish crude for this refinery, indicate steady development in the northern Permian basin area.

Activity in Crane County's McKnight pool and Ector County's North Cowden and Johnson pools featured the southern part of the basin.

The Railroad Commission gage of 878 bbl. daily has been assigned Aloco Oil Co. No. 1 Mary Jordan, Section 764, extending production 1½ miles east of the northeast edge of the Wasson-Denver field of Yoakum County and establishing another link between that field and Bennett field. The well had been deepened to 5,200 ft. from 5,150 ft. where it showed for an estimated 125 bbl. daily after acid treatment. Another treatment was given after deepening.

Extending production about a mile north of the extreme eastern edge of the field, Milhoan Drilling Co. No. 1 Willard, Section 803, has been completed for 1,391 bbl. of oil daily, leaving only 2 miles between the Wasson-Denver area and the Bennett pool. The well had been treated with 7,000 gal. of acid in pay section topped at 4,912 ft. and carried to total depth of 5,142 ft.

East offset to Texas Pacific Coal & Oil Co. No. 1 Brownfield in the heart of the link area, Oil Development Co. of Texas No. 1-A Willard, western part of the NW¼ of Section 803, was testing at total depth of 5,267 ft. in lime. Increase in oil had been encountered from 5,166 ft. to 5,191 ft. with 1 gal. of water per hour from 5,350 ft. to 5,255 ft. The well has been heading oil since being deepened and operators plan to plug back above the water and acidize the pay.

Basin States Oil Co. No. 1 Hague, Section 802, ½ mile west of No. 1 Brownfield producer, was drilling below 3,480 ft. It is 2,200 ft. from the N and W lines of the northwest quarter of the section.

Bennett Pool

One-half mile south outpost to the Bennett pool, Mid-Continent Petroleum Corp. No. 1 Comer, Section 760, is drilling below 3,745 ft. after topping Yates sand some 26 ft. higher than the discovery well in the Bennett field. Also on the south end of the Bennett field J. E. Mabee No. 7 Willard, Section 741, seeking a quarter-mile west extension to the extreme south end of production, was drilling below 4,180 ft. in anhydrite and lime.

Completion of the Motor Fuels Corp. refinery at Levelland in Hockley County and the fact that the field allowables of the Slaughter and the Duggan pools have been more than tripled to furnish crude promises an increase in drilling for several northern basin pools including Slaughter, Duggan, Dean, and Livermore-Wright. To supply sufficient crude for the refinery, which has a capacity of 4,500 bbl. daily, the Railroad Commission has increased the Duggan field allowable from 459 bbl. daily to 1,656 bbl. daily and the Slaughter pool from 1,691 bbl. daily to 4,600 bbl. daily. South Plains Pipe Line Corp., which will supply the refinery with crude from the Cochran and Hockley County pools, has been completed and in operation since before the first of the month, running crude to storage at the refinery.

In the McKnight area of northwestern Crane County Gulf Oil Corp. No. 5 McKnight, Section 1, Block 21-B, P.S.L. Survey, a mile-northeast outpost, was bottomed at 4,200 ft. in lime to run casing. Core from 4,185 ft. to 4,189 ft. had returned 1½ ft. of dolomite bleeding oil and showing scattered pinpoint porosity. From 4,193 ft. to 4,199 ft. a 6-ft. core netted only small showings of oil and gas with slight porosity. Although projected to the Tubbs pay operators may carry the test deeper to the Ellenburger which produces in the Sand Hills field.

Johnson Pool

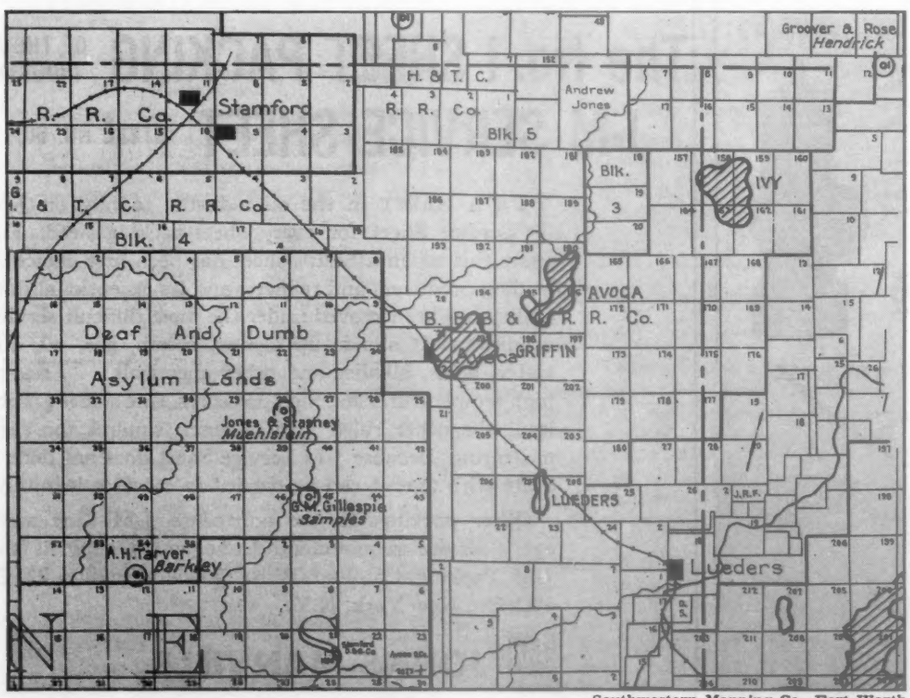
South offset to production in the mile-east extension area to the Johnson pool in Ector County has been staked by Indian Territory Illuminating Oil Co. No. 1 Johnson, in the northeast part of Section 1, Block 43, T.&P. Survey. Indicating a possible link between the Johnson pool and the North Cowden pool in Ector County, Sloan & Zook and Ferndale Drilling Co. continue testing No. 1 J. L. Johnson, wildcat, in Section 34, Block 43, T.&P. Survey. Test has been plugged back to 4,168 ft. after encountering 600 ft. of sulfur water at 4,365 ft.

Prospects of a ½-mile northwest extension between the Masterson and Pecos Valley pools of northern Pecos County appeared when H. L. Cain No. 1 Texas-Masterson-Lehn, Section 71, Block 10, H.&G.N. Survey, drilled oil sand from 1,685 ft. to 1,691 ft. Test is drilling deeper.

Scurry County

The Sharon pool of Scurry County has been given two more extensions and several tests are drilling or in completion stages. W. E. Callahan No. 2 Bank of Snyder, W½ NE¼ Section 129, was completed for 109 bbl. daily, pumping, from 2,350 ft. to 2,558 ft.

Paul C. Teas No. 2 Thompson, NW¼ Section 129, and north offset to his No. 1 Thompson, is testing after drilling sand from 2,390-2,441 ft. A mile northwest of the pool, H. C. Wheeler's semiwildcat in the Sims lands, Section 141, pumped 18 bbl. of oil in 17 hours after a 690-qt. shot from 2,301 ft. to 2,475 ft. H. C. Wheeler's test in the Sterling lands of Section 140 is cleaning out following a 230-qt. shot from 2,255-2,350 ft. J. B. Stoddard No. 1 R. O. McClure, SE cor. N½ SE Section 142, is testing after receiving shot in the pay section.



Southwestern Mapping Co., Fort Worth

The much discussed Palo Pinto trend in Jones and Shackelford counties in West Central Texas has primarily four wildcat tests which are being closely watched as they drill ahead toward the prolific Palo Pinto lime horizon

WEST CENTRAL TEXAS

Jones County again leads in West Central Texas with completions and locations reported for five pools as well as new wildcat locations on the Palo Pinto trend.

With eight wells being completed per week in the two most active areas in West Central Texas, the Griffin pool of Jones County and the Ivy pool of Shackelford County, inadequate pipe-line outlets are retarding the completion of wells. Humble Pipe Line Co. plans to increase its facilities for handling crude in the near future to relieve the stress. Several wells are standing with no connections, in both the Griffin and Ivy pools. Three completions were reported for the Ivy pool, all for daily potentials of more than 1,200 bbl. Potential gages are due to be run over the week-end and on several wells in the Griffin pool.

In the Guitar pool of southeastern Jones County the third and fourth producers were in sight for the new deep-pay horizon opened several weeks ago by T. D. Humphrey No. 2 Guitar. Danciger Oil & Refining Co. has a well flowing at the rate of 12 bbl. hourly from the lower Hope horizon, the new pay zone, from 2,140-45 ft. The fourth deeper pay producer is R. B. Farris test, in the same section as the Danciger well, and producing from pay at the same depth.

The Appling pool, centering around Section 32, B.B. B.&C. Survey, in the northwestern part of Jones County, has added its third producer at the Grisham-Hunter No. 1-B Appling, bottomed at 2,641 ft. with pipe set

at 2,633 ft. The well was brought in for a flow 10 bbl. hourly through casing.

Jones County

Further possibility of linking the Lewis and Steffens pools of southeastern Jones County, was seen when Fain-MaGaha Oil Corp. No. 1 Ferguson, northeast of Lewis production, cored oil sand at 1,890-93 ft. and set casing. It is in the NW NW Section 36, Block 15, T.&P. Survey.

Several wildcat tests continue on the Palo Pinto trend of Jones and Shackelford counties. The area was given a new wildcat when Jones, Stasney & Bryon, Albany operators, spudded No. 1 Jacob Muehlstein. It will seek the Palo Pinto lime, a mile south and 2½ miles west of the town of Avoca with the drill site in the NE¼ of Section 28, D.&D.A. Survey. G. M. Gillespie and others No. 1 J. D. Samples, Section 45, D.&D.A. Survey, 4 miles southwest of Avoca, is drilling below 3,441 ft. toward the Palo Pinto horizon. Tarver No. 1 Barkley, 4 miles farther southwest and in Section 54, D.&D.A. Survey, is drilling below 3,851 ft.

Haskell County

Two new wildcat tests have been staked in Haskell County, one as an outpost to the Pardue pool and the other in the southeast corner of the county. K. B. Nowles has staked No. 1 A. E. Pardue, 1,200 ft. south of the northwest corner of D. Hamilton Survey, 1½ miles south of production in the Pardue pool. On the Hendrick ranch, in the southeast corner of the county, P. S. Kendrick has contracted with Grover & Rose of Albany for a rotary test to the Palo Pinto lime in the NE cor. of Section 1, A.B.&M. Survey. The latter wildcat is between production in the Ivy pool and shallow production in the southeastern corner of Haskell County.

Nolan County

Wildcat test to 8,000 ft., one of the deepest in the area, has been staked by Plymouth Oil Co. on a block of 4,000 acres in Nolan County. Test is No. 1 Mrs. F. M. McClure, located 990 ft. from the N and E lines of the NW¼ of Section 49, Block 23, T.&P. Survey. The pits have been dug and rotary material is being moved. The 8,000-ft. test is expected to explore the entire section of Pennsylvanian and the upper members of the Ordovician section.

Stephens County

Prospects for a new deep oil pool in extreme west Stephens County were indicated when Whittmer Oil & Gas Co. No. 1 B. D. Loving, Section 66, B.A.L. Survey, near the Shackelford County line, encountered gas and oil sand at 3,468 ft. and after drilling 2 ft. into the section shut down to prepare for a test. It has drilled several shows of both oil and gas in the upper horizons.

Howard County

Due to continued crude shortage at the Cosden Petroleum Corp. refinery just outside of Big Spring, the Railroad Commission has offered increased allowables to several nearby pools to supply sufficient crude. The increased allowables were in the form of a lifting of the week-end shutdowns in Iatan, East Howard, Snyder and Howard-Glasscock fields during July.

WEST TEXAS COMPLETIONS

(24-hour gages)

Crane County

In the McElroy field, Gulf Oil Corp. No. 50 McElroy, 2,779-2,971 ft., 373 bbl.; old well drilled deeper. Gulf Oil Corp. No. 195 McElroy, 2,735-3,057 ft., 135 bbl. A wildcat, P. A. Christian No. 1 Stephenson, dry and abandoned at total depth of 3,345 ft.

Crockett County

In the Crockett pool, Gilcrease Oil Co. No. 7-13 University, 1,475-1,515 ft., 92 bbl. A wildcat, Humble Oil & Refining Co. No. 1 Ozona-Barnhart, dry and abandoned at total depth of 8,719 ft.

Dawson County

A wildcat, Magnolia Petroleum Co. No. 1 J. B. Fry, dry and abandoned at total depth of 5,258 ft.

Ector County

In the Foster pool, Arrow Drilling Co. No. 10 Foster, 4,125-4,300 ft., 928 bbl. In the Johnson pool, Continental Oil Co. No. 6 Johnson, 4,123-4,252 ft., 792 bbl. In the Cummins pool, Cities Service Oil Co. No. 8-C Cummins, 4,215-75 ft., 318 bbl. W. H. Dunning, Jr., No. 3-B Cummins, location abandoned at 150 ft.

Gaines County

In the Wasson pool, Continental Oil Co. No. 4-51 Wasson, 4,923-87 ft., 682 bbl.

Howard County

In the Chalk-Settles pool, C. L. Wann No. 6 Chalk, 2,670-2,930 ft., 1,109 bbl.

Loving County

Michigan Oil & Gas Co. No. 8 Kyle, 3,877-3,925 ft., 248 bbl.

Pecos County

In the Payton pool, Cities Service Oil Co. No. 3 Dorr, 2,005-74 ft., 365 bbl. Marvin-Henderson Oil Co. No. 3 Tippett, 482-514 ft., 20 bbl. Green & Goodman No. 1 Masterson, dry and abandoned at total depth of 1,526 ft. Mid-Continent Oil Co. No. 7 Jasper City Realty Co., 1,610-52 ft., 193 bbl.

Reeves County

A wildcat, Far West Oil Co. No. 1 Richards-Shaw, 1,621-80 ft., 28 bbl.; old well drilled deeper.

Scurry County

In the Sharon pool, W. E. Callihan No. 2 First National Bank of Snyder, 2,350-2,560 ft., 109 bbl. H. C. Wheeler No. 1 M. Sims, 2,305-2,506 ft., 182 bbl.

Upton County

In the McElroy pool, Gulf Oil Corp. No. 59 McElroy, 2,845-2,983 ft., 215 bbl.; old well drilled deeper. Harvey-Sergeant & Rutter No. 6 Cordova-Union and Texas Co., 2,210-47 ft., 273 bbl. Texas Pacific Coal & Oil Co. No. 36-A Lane, 2,070-2,160 ft., 254 bbl.

Ward County

Prince Bros. No. 1 Durgin, 2,435-2,530 ft., 30 bbl. Sinclair Prairie Oil Co. No. 16 Archenhold, 2,530-3,006 ft., 514 bbl.

Winkler County

Carter & Pure No. 8 Walton, 3,244-3,395 ft., 180 bbl. Standard Oil Co. of Texas No. 13-65 W. E. Baird, 3,285-3,400 ft., 268 bbl.

Yoakum County

In the Wasson-Denver pool, Aloco Oil Co. No. 3 Johnson, 4,800-5,233 ft., 621 bbl. Aloco Oil Co. No. 1 M. Jordan, 5,000-5,200 ft., 877 bbl. Aloco Oil Co. No. 4 A. B. Smart, 5,013-37 ft., 729 bbl. Continental Oil Co. No. 1-868 Kendrick, 4,950-5,125 ft., 1,307 bbl. Magnolia Petroleum Co. No. 2 Kendrick, 4,980-5,119 ft., 1,200 bbl. J. W. Murchison No. 8-B C. A. Elliott, 4,950-5,090 ft., 656 bbl. Osage Drilling Co. No. 1 C. A. Hudson, 4,975-5,117 ft., 396 bbl. Osage Drilling Co. No. 1 J. H. Lynn, 5,140-5,226 ft., 528 bbl. Texas Pacific Coal & Oil Co. No. 21 Bennett, 5,050-5,230 ft., 2,110 bbl. Texas Pacific Coal & Oil Co. No. 1-A C. W. Cecil, 5,010-5,116 ft., 1,264 bbl. Sinclair Prairie Oil Co. No. 3 H. Corrigan, 4,230-4,356 ft., 1,692 bbl.

WEST CENTRAL TEXAS COMPLETIONS

Comanche County

Kirk & Elliott No. 1 Richardson, dry and abandoned at 608 ft.

Shackelford County

Algord No. 1 Swenson, 3,189-94 ft., 367 bbl. Algord No. 4 Swenson, abandoned location. J. F. Baker No. 9

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Davis, 1,614-26 ft., 8 bbl. Roeser-Pendleton and Continental Oil Co. No. 37-A-85 Cook, dry and abandoned at 1,394 ft. Ungren & Frazier No. 4 McCown, 3,161-95 ft., 1,000 bbl.

Eastland County

Dry & Hightower No. 1 Wilkerson, dry and abandoned at 702 ft.

Jones County

B. Fields No. 6 Taylor, 3,240-55 ft., 3,000 bbl. King Oil Co. No. 9 Carter, abandoned location.

Palo Pinto County

Allen & Ritchie No. 2 fee, 1,193-1,207 ft., 5,690,000 cu. ft. of gas.

Stephens County

Falcon Oil Co. No. 1 Hopper, dry and abandoned at 3,815 ft.

Stonewall County

Forest Development Co. and Carl B. King Drilling Co. No. 1 Moreland, dry and abandoned at 5,545 ft.

PANHANDLE FIELD COMPLETIONS

(24-hour gages)

Carson County

Hagy, Harrington & Marsh No. 1 A. Gordzellick, 2,550-2,760 ft., 28,237,000 cu. ft. of gas. Hagy, Harrington & Marsh No. 1 J. H. Osborne, 2,795-2,955 ft., 27,354,000 cu. ft. of gas. Northern Oil Co. No. 6 E. Cooper, 3,075-3,157 ft., 691 bbl.

Gray County

J. H. Yealy No. 3 W. C. Archer, 3,164-3,280 ft., 87 bbl.

Hutchinson County

J. E. Crosby, Inc., No. 32 H. W. Pitts, 2,825-2,955 ft., 540 bbl. Phillips Petroleum Co. No. 42 Cockrell Ranch, 2,970-3,060 ft., 363 bbl. Stanolind Oil & Gas Co. No. 16 H. B. Terry, 2,964-3,016 ft., 352 bbl.

East Texas Fields

(Continued from Page 77)

abandoned location. Stuckey Oil & Gas Co. No. 1 S. M. J. Benson, 752-93 ft., 38 bbl. Trentman Nunnellee No. 1 J. K. Quinn, 3,879-4,002 ft., 387 bbl. Underwood Drilling Co. No. 39 R. Campbell C, 860-85 ft., 30 bbl. Underwood Drilling Co. No. 40 R. Campbell C, 858-86 ft., 15 bbl. E. D. Willis No. 1 C. K. Garvey, 805 ft. dry.

EAST TEXAS FIELD COMPLETIONS

(One-hour gages)

Gregg County—Longview Area

Henry L. Allen No. 3 M. Bonner, 3,567-89 ft., 12 bbl. Arkansas Fuel Oil Co. No. 11 J. Stephens, 3,577-3,618 ft., 98 bbl. Magnolia Petroleum Co. No. 16 A. Christian, 3,660-70 ft., 76 bbl. Stanolind Oil & Gas Co. No. 31 J. C. Persons, 3,456-3,514 ft., 48 bbl.

Gregg County—Kilgore Area

American Liberty Oil Co. No. 13 Sabine River Tract No. 7, abandoned location. James E. Kemp No. 8 A. A. King, 3,522-72 ft., 20 bbl. James E. Kemp No. 9 A. A. King, 3,520-72 ft., 20 bbl. James E. Kemp, No. 10 A. A. King, 3,520-74 ft., 20 bbl. Texas Co. No. 47 M. T. Cole, 3,500-04 ft., 58 bbl.

Rusk County—Joiner Area

Stanolind Oil & Gas Co. No. 42-A H. C. Maxwell, abandoned at 3,285 ft.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Franklin County

In the Talco pool Magnolia Petroleum Co. No. 13 O. S. Maxton, 4,271-4,303 ft., 140 bbl.

Grayson County

A wildcat, Sinclair Prairie Oil Co. No. 1 M. Williams, plugged and abandoned at 4,543 ft.

Henderson County

In the Flag Lake field, Richards & Holloway, Inc., No. 2 A. B. Tarkington, dry and abandoned at 3,045 ft. In the Opelika area, Tide Water-Seaboard-Humble No. 1 J. H. Lewis, dry and abandoned at total depth of 8,465 ft. in Trinity formation. Tide Water-Seaboard-Humble No. 1 Allie Scott, dry and abandoned at total depth of 8,972 ft. in Trinity formation.

Limestone County

A wildcat, Zephyr Oil Co. No. 1 C. Peeples, dry and abandoned at 2,825 ft.

Rains County

A wildcat, McKinley-Hastings No. 1 Taggert, dry and abandoned at 720 ft.

Kansas Fields

(Continued from Page 61)

tion in cuttings to 3,313 ft., total depth. Seven-inch casing was set on top of the lime and the crew was preparing for completion test. Location is on a Pure Oil Co. farmout.

W. C. McBride, Inc., No. 1 Heintzleman, SE SE NE Section 30-21-1w. ¼ mile west of the Graber pool, McPherson County, topped Hunton lime at 3,293 ft. and had oil showing in cores to 3,322 ft. Another core was being taken.

Stanolind Oil & Gas Co. No. 1-B Krug, CNL N½ SE Section 27-14-14w, which extended the Gurney pool in Russell County ½ mile southward, was acidized and made 24-hour potential of 402 bbl. of oil from Lansing lime.

Sinclair Prairie Oil Co. and others No. 1-A Gardner, SW NW SE Section 16-32-5, north extensioner of the Frog Hollow area in Cowley County, flowed 342 bbl. of oil in 32 hours from Bartlesville sand at 3,095 ft. The crew was preparing to take potential test.

Shell Oil Co. No. 1 Berrick, NW NW SE Section 13-15-13w, wildcat south of Bunker Hill, Russell County, was bottomed at 3,386 ft., in Arbuckle lime, made electrical survey and was reported dry and abandoned.

Elbar Corp. No. 1 well, NE SE SE Section 34-26-7, Butler County wildcat, had a hole full of water at total depth of 2,735 ft. in Mississippi lime and was reported abandoned.

Hittle Completions

Two large producers were completed in the Hittle pool, Cowley County. W. M. McKnab and Tulsa Oil Corp. No. 2 Waite, SE NE NW Section 28-31-4, was bottomed at 3,319 ft. in Arbuckle lime and after bottom-hole pressure computation made potential of 4,026 bbl. of oil daily.

W. L. Hartman and Tulsa Oil Corp. No. 10 Waite, NW SE SW Section 21-31-4, on physical retest made potential of 4,271 bbl. of oil daily. It was bottomed at 3,315 ft. in Arbuckle lime.

The following new operations were reported:

Cowley County: Barnett & Connelly No. 6 Waite, SW NW SW Section 21-31-4, drilling below 2,230 ft.; Hartman & Blair No. 11 Waite, SW SE SW Section 21-31-4, drilling below 470 ft.; B. B. Blair No. 1 Waite, NE NW NW Section 28-31-4, drilling below 100 ft.; McKnab & Blair No. 3 Waite, NW NE NW Section 28-31-4, drilling below 230 ft.; Sinclair Prairie Oil Co. No. 2-A Gardner, SE NW SE Section 16-32-5, location; B. B. Blair and others No. 4 Dunlop, NE NW NE Section 21-32-5, drilling below 462 ft.; Phillips Petroleum Co. No. 1 Glantz, SE SE NE Section 3-31-3, wildcat, building rotary rig; Ben Gralapp and others No. 1 Clark, NW NW NE Section 11-31-3, an old wildcat bottomed at 3,248 ft., preparing to deepen.

Greenwood County: Oko Oil Co. No. 18 Shadel, NW SW SE Section 15-23-13, spudded.

Barton County: Shell Oil Co. No. 4-C Schneider, NE NW NE Section 2-16-14w, rigging up rotary; Skelly Oil Co. No. 1 Hickey, C SW Section 15-18-15w, location.

Wildcat Near Wichita

Sedgwick County: S. L. Parks No. 1 Fisher, NW NW NE Section 25-26-1e, wildcat 3 miles northeast of Wichita, rigging up rotary.

Sumner County: Tom Palmer No. 1 Lawson, SW SW SE Section 9-35-2e, wildcat, rigging up rotary.

Ellis County: Darby Petroleum Corp. No. 3 Henderson, SW SW NW Section 7-11-17w, rigging up rotary; same company's No. 6 Jorgenson, NW NW SW Section 7-11-17w, moving in material; Lario Oil & Gas Co. No. 1-C Cress, SW cor. Section 13-11-17w, location; Gulf Oil Corp. No. 6 Mai, NE SE SE Section 14-11-17w, rigging up rotary; Dickey Oil Co. No. 2 Carmichael, C S½ NW NW Section 18-11-17w, location; Shell Oil Co. No. 21 Rumsey, SE SW NE Section 23-11-17w, rigging up rotary.

Russell County: Gulf Oil Corp. No. 1 Rein, C S½ SW NE Section 8-15-13w, location; Coralena Oil Co. No. 6 Sellens, NE SE NW Section 17-15-13w, rigging up rotary; W. I. Southern, Inc., No. 4 Sellens, SE SE NW Section 29-15-13w, rigging up rotary.

Rice County: Vickers Petroleum Co. No. 1-A Rodenberg, NE NW NW Section 8-18-10w, wildcat, rigging up rotary; O-Kan Drilling Co. No. 1 Shonyo, SW SW NE Section 34-18-9w, wildcat, building rotary rig; Continental Oil Co. and others No. 10 Wood, NE SE SE Section 12-18-8w, cellar; H. E. Garden No. 1 Browning, C E½ NE NW Section 7-19-9w, cellar; G. H. Rose & Son No. 1 Cross, NW NW NE Section 15-20-9w, cellar; Darby Petroleum Corp. and others No. 1 Oden, SE NW NW Section 5-21-7w, location.

Missouri Operations

ST. JOSEPH, Mo., July 17.—A showing of oil was reported to have been found in a shallow sand at a test well being drilled by the Carroll Syndicate 3 miles east of Quote in Carroll County, Missouri sector of the Forest City basin. The oil showing, estimated at 5 to 10 bbl. daily according to a press dispatch from Richmond, was found at 95 ft. Operators were drilling ahead to proposed depth of 500 ft. The Carroll Syndicate, it is reported, will drill a series of test wells at around 500 ft., and a deep test if the findings are favorable.

Work has been started at several new wildcats in the basin. J. A. Turner and others have spudded at No. 1 Graben, NW cor. Section 10-52-29w, Ray County, northwest of Richmond. Northeast of that town and also in Ray County, Bert Featherstone and others No. 1 Penney, NW cor. Section 1-53-27w, was a location.

Mayson Oil Co. No. 1 McGonitle, NE SW Section 20-65-13w, eastern Schuyler County, was reported to have topped Mississippi lime at 335 ft. and was drilling below 430 ft.

H. V. Elwell No. 1 Taylor, Section 12-62-21w, west of Milan, Sullivan County, had drilled to 425 ft. and casing was being set.

Operators were experiencing trouble with stuck bit at J. H. Everitt and others No. 1 Spring, Section 30-62-38w, near Mound City, Holt County. The well, first to be started in the basin and a mystery test, was reported to have been acidized.

Progress reports on other Missouri wildcats may be found in the wildcat section elsewhere in this issue.

Two shallow failures in Jackson County were reported the past week. Walter Shearon and others No. 1 Florence, SE SW NW Section 27-48-31w, had gas showing at 105 ft. and 191 ft., but was dry and abandoned at 370 ft.

Bradford and others No. 1 Lutz, SE NE SW Section 33-49-32w, found only a trace of oil and was dry and abandoned at 642 ft., total depth.

La.-Ark. Fields

(Continued from Page 70)

Magnolia Petroleum Co. No. 1 Gray-Cox, 286 bbl. distillate daily from total depth of 8,416 ft. Union Production Co. No. 1 Walker, dry and abandoned at 10,383 ft.

Lafayette County

East Texas Refining Co. No. 1 H. D. Scruggs, location abandoned. Standard Oil Co. No. 5 J. P. McKeen, 210 bbl. in 2 hours from total depth of 7,247 ft. East Texas Refining Co. No. 1-B Patten Estate, 81 bbl. per day from total depth of 3,505 ft.

Union County

Lion Oil & Refining Co. No. 1 Frank, 37 bbl. per day from total depth of 7,700 ft.

EAST TEXAS BORDER COUNTY COMPLETIONS

Cass County

Red Iron Drilling Co. No. 1 Spearman, dry and abandoned at total depth of 3,812 ft.

Harrison County

Arkansas-Louisiana Gas Co. No. 1-B C. M. Abney, 32,000,000 cu. ft. of gas per day from total depth of 5,930 ft. J. D. Reynolds No. 1 R. S. Terry Estate, 20 bbl. per day from total depth of 2,346 ft.

Shelby County

W. H. Neil No. 1-A C. W. McDaniels, dry and abandoned at total depth of 1,510 ft.

Summary of Operations in All Fields, June

SUMMARY OF ALL FIELDS

Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Eastern field	377	788	18	68
Lima	3	5	2	0
Ohio	87	531	27	44
Indiana	21	3,031	8	1
Western Kentucky	56	1,208	33	2
Eastern Kentucky	27	83	3	14
Michigan	123	54,263	50	4
Illinois	293	80,509	49	1
Kansas	139	42,597	29	7
Oklahoma	205	24,672	50	17
N. Central Texas	216	73,415	90	1
West Texas	137	110,214	9	2
Texas Panhandle	33	6,007	1	13
East Texas	31	1,587	0	0
East Central Texas	20	1,904	8	2
East Texas border	5	1,870	0	0
Gulf Coast, Texas	96	23,083	17	4
Southwest Texas	172	15,077	50	2
Arkansas	19	5,120	7	0
North Louisiana	36	3,180	14	5
Gulf Coast, La.	67	15,153	15	3
Mississippi	2	0	2	0
Montana	23	1,878	7	1
Wyoming	4	1,402	0	0
New Mexico	44	10,551	3	1
Florida	1	0	1	0
Missouri	3	0	3	0
Total June	2,240	478,128	496	192
Total May	2,385	470,549	603	184
Difference	145	7,579	107	8

Rigs and Wells Drilling

	Rigs	Drlg.	Total
Eastern fields	77	338	415
Lima	3	7	10
Ohio	39	113	152
Indiana	6	67	73
Western Kentucky	0	64	64
Eastern Kentucky	7	21	28
Michigan	19	122	141
Illinois	40	340	380
Kansas	41	197	238
Oklahoma	36	353	389
N. Central Texas	110	248	358
West Texas	87	279	366
Texas Panhandle	16	88	104
East Texas	3	14	17
East Central Texas	7	46	53
East Texas border	7	4	11
Gulf Coast Texas	23	109	132
Southwest Texas	46	135	181
Arkansas	17	35	52
North Louisiana	27	39	66
Gulf Coast, Louisiana	25	123	148
Mississippi	4	2	6
Montana	6	48	54
Wyoming	3	72	75
New Mexico	10	126	136
Florida	1	2	3
Colorado	2	34	36
Georgia	0	1	1
Arizona	0	7	7
Nebraska	0	4	4
Utah	1	4	5
Missouri	3	17	20
Total June	666	3,059	3,725
Total May	643	3,100	3,743
Difference	23	41	18

OKLAHOMA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	0	0	0	0	0	1
Beckham	3	0	0	3	0	0
Caddo	5	2,630	0	0	3	10
Carter	5	62	1	0	0	6
Choctaw	0	0	0	0	0	1
Cleveland	0	0	0	0	0	3
Coal	0	0	0	0	0	1
Comanche	2	4	1	0	1	2
Creek	17	866	2	1	3	48
E. Oklahoma	0	0	0	0	6	38
Ellis	0	0	0	0	0	1
Garfield	1	0	1	0	0	4
Grady	1	0	0	1	0	5
Grant	0	0	0	0	0	2
Harmon	0	0	0	0	0	1
Harper	0	0	0	0	0	1
Hughes	1	2	0	0	0	2
Jackson	10	771	0	0	1	9
Jefferson	0	0	0	0	0	2
Kay	1	4	0	0	0	2
Kingfisher	1	0	1	0	0	2
Kiowa	2	0	2	0	1	4
Lincoln	11	450	3	0	0	11
Logan	2	0	1	1	0	4
Love	1	0	1	0	0	0
Marshall	0	0	0	0	0	2
Muskogee	5	5	3	1	2	5
Noble	0	0	0	0	1	3
Okfuskee	9	572	3	2	0	9
Oklahoma	5	375	0	1	0	5
Okmulgee	15	249	3	3	2	19
Osage	11	313	2	0	4	17
Pawnee	2	167	0	0	0	5
Payne	9	3,772	3	0	0	6
Pontotoc	15	3,317	5	0	1	15
Pottawatomie	33	7,525	4	0	7	41
Seminole	28	3,220	11	2	3	42
Stephens	7	68	2	1	1	10
Tillman	1	300	0	0	0	4
Tulsa	2	0	1	1	0	7
Washita	0	0	0	0	0	3
Ttl. June	205	24,672	50	17	36	353
Ttl. May	150	20,385	42	11	36	319
Difference	55	4,287	8	6	0	34

KANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atchinson	0	0	0	0	1	0
Barber	2	235	0	1	0	1
Barton	12	2,694	2	0	2	18
Butler	9	193	2	0	2	9
Chase	1	0	1	0	0	0
Comanche	0	0	0	0	0	1
Coffey	0	0	0	0	0	1
Cowley	16	16,394	4	0	4	18
Dickinson	0	0	0	0	0	1
Douglas	0	0	0	0	1	0
Ellis	9	4,585	0	0	5	14
Ellsworth	2	351	0	0	2	5
Finney	0	0	0	0	0	1
Geary	0	0	0	0	0	1
Graham	0	0	0	0	0	1
Grant	2	0	0	2	0	2
Gray	0	0	0	0	0	1
Greenwood	6	65	3	0	2	10
Harvey	1	0	1	0	0	1
Haskell	0	0	0	0	0	1
Johnson	7	28	1	3	0	4
Kingman	0	0	0	0	1	0
Kiowa	0	0	0	0	0	1
Marion	0	0	0	0	0	5
McPherson	3	532	1	0	3	10
Meade	1	0	1	0	0	0
Miami	0	0	0	0	0	1
Ness	0	0	0	0	0	1
Norton	1	173	0	0	0	0
Osage	0	0	0	0	0	1
Ottawa	1	0	1	0	0	0
Phillips	1	827	0	0	0	0
Pratt	0	0	0	0	0	1
Reno	3	357	1	0	2	3
Rice	25	6,339	2	0	5	28
Rooks	2	172	1	0	0	2
Russell	21	7,626	2	0	6	35
Rush	1	0	1	0	0	0
Saline	1	0	1	0	0	0
Sedgwick	1	0	1	0	0	3
Shawnee	1	0	1	0	0	0
Sherman	1	0	0	1	0	1
Stafford	6	2,006	0	0	2	9
Sumner	1	0	1	0	2	2
Stevens	0	0	0	0	1	0
Woodson	2	20	1	0	0	4
Ttl. June	139	42,597	29	7	41	197
Ttl. May	93	28,075	19	4	40	206
Difference	46	14,522	10	3	1	9

WEST TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	5	5,427	0	0	3	5
Brewster	0	0	0	0	0	2
Cochran	1	402	0	0	0	1
Concho	0	0	0	0	1	3
Crane	8	21,980	0	0	2	16
Crockett	3	226	0	0	2	6
Crosby	0	0	0	0	0	1
Culberson	0	0	0	0	0	2
Dawson	0	0	0	0	0	2
Ector	33	41,945	0	0	25	51
El Paso	0	0	0	0	0	1
Gaines	3	1,682	1	0	1	4
Glasscock	0	0	0	0	0	2
Hockley	5	5,107	0	0	0	8
Howard	6	2,802	1	0	2	10
Hudspeth	0	0	0	0	0	2
Kent	0	0	0	0	0	1
Loving	0	0	0	0	0	4
Lynn	0	0	0	0	0	1
McCulloch	2	0	1	1	0	0
Nolan	0	0	0	0	0	1
Pecos	21	4,322	3	0	16	36
Presido	0	0	0	0	1	2
Reagan	0	0	0	0	0	1
Reeves	0	0	0	0	0	3
Runnels	0	0	0	0	1	2
Schleicher	1	158	0	0	0	2
Scurry	1	147	0	0	1	8
Stonewall	0	0	0	0	0	1
Sutton	0	0	0	0	0	2
Terrell	0	0	0	0	0	2
Tom Green	1	0	1	0	0	4
Upton	9	2,748	0	0	2	5
Ward	10	2,348	1	0	7	26
Winkler	4	1,745	0	1	3	12
Yoakum	24	19,175	1	0	20	50
Ttl. June	137	110,214	9	2	87	279
Ttl. May	178	113,509	16	0	73	270
Difference	41	3,295	7	2	14	9

TEXAS GULF COAST

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ace	1	288	0	0	0	0
Aldine	0	0	0	0	0	2
Anahuac	2	1,200	0	0	1	2
Batson	0	0	0	0	0	1
Bay City	1	218	0	0	0	2
Barbers Hill	0	0	0	0	0	1
Bammel	1	0	1	0	0	0
Boling	1	528	0	0	0	1
Caplen	0	0	0	0	1	0
Cedar Point	1	0	1	0	0	1
Clear Lake	2	216	0	0	0	1
Clinton	1	0	0	1	0	0
Clam Lake	2	141	0	0	0	1
Cotton Lake	0	0	0	0	0	1
Cordelle	2	324	1	0	0	2
Damon Mound	0	0	0	0	0	2
Danbury	1	0	1	0	1	1
Dickinson	4	803	0	0	2	3
Eureka	3	1,012	1	0	1	1
Esperson	0	0	0	0	0	1
Fannett	0	0	0	0	0	1
Fairbanks	12	1,827	0	0	3	5
Francitas	0	0	0	0	0	1
Friendswood	7	3,525	0	0	2	2
Goose Creek	1	106	0	0	0	0
Hardin	1	78	0	0	1	3
Hankamer	1	600	0	0	1	0
Hastings	6	2,833	1	0	1	2
High Island	0	0	0	0	0	1
Hitchcock	1	0	1	0	0	1
Hull	3	921	0	0	1	1
Humble	0	0	0	0	0	1
League City	2	452	0	0	1	6
Liberty	0	0	0	0	0	1
Louise	1	375	0	0	0	3
Lovells Lake	0	0	0	0	0	2
Labelle	0	0	0	0	0	1
Magnet	1	48	0	0	0	1
Markham	0	0	0	0	0	1
North Markham	0	0	0	0	0	1
Old Ocean	1	410	0	0	1	5
Orange	2	359	0	1	0	1
Pierce Junction	1	436	0	0	1	0
Pickett Ridge	0	0	0	0	0	1
Port Neches	1	177	0	0	0	1
Satsuma	1	0	0	1	0	0
Seabreeze	0	0	0	0	1	0
Segno	0	0	0	0	0	3
Silsbee	1	384	0	0	0	2
South China	1	240	0	0	0	1
South Cotton Lake	1	0	0	1	0	1
Sour Lake	1	39	0	0	0	1
Spindletop	0	0	0	0	0	1
South Houston	0	0	0	0	0	1
Spurger	0	0	0	0	0	2
Thompson	7	3,115	0	0	0	4
Tomball	2	636	0	0	0	1
Van Vleck	2	364	0	0	0	1
West Ranch	1	187	0	0	0	2
West Columbia	3	932	1	0	0	3
Withers	4	309	0	0	1	3
Miscellaneous	9	0	9	0	3	18
Total June	96	23,083	17	4	23	109
Total May	150	33,057	29	7	29	119
Difference	54	9,974	12	3	6	10

SOUTHWEST TEXAS

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adami	1	72	0	0	0	0
Agua Dulce	0	0	0	0	0	1
Alice (South)	4	490	0	0	2	3
Alta Vista	0	0	0	0	0	1
Ben Bolt	1	150	0	0	1	2
Benavides	1	127	0	0	0	1
Blucher	1	0	1	0	0	0
Calliham	0	0	0	0	0	1
Camada	2	0	1	1	0	0
Cedro Hill	3	164	0	0	1	0
Chacon Lake	1	1	0	0	1	1
Clara Driscoll	5	512	0	0	0	2
Colorado	2	174	0	0	1	0
Comitas	3	103	1	0	0	0
Dale	2	158	0	0	0	1
Darst Creek	6	251	1	0	1	3
Dunlay	1	0	1	0	1	0
East Mathis	1	54	0	0	0	0
Eckert	1	0	1	0	0	0
East Premont	1	864	0	0	1	0
Escobas	1	56	0	0	0	1
East White Point	11	1,517	0	0	3	4
Ezzell	0	0	0	0	0	2
Fitzsimmons	3	308	0	0	0	2
Flour Bluff	0	0	0	0	0	1
Fox	1	349	0	0	1	0
Grayburg	0	0	0	0	0	1
Heyser	1	97	0	0	0	3
Government Wells	0	0	0	0	0	1
Hoffman	6	277	1	0	1	3
Kelsey	5	519	0	0	1	1
Killam	0	0	0	0	0	1
Kimbro	0	0	0	0	0	1
Keeran	0	0	0	0	0	1
La Blanca	0	0	0	0	0	1
Lacoste	0	0	0	0	1	0
La Rosa	7	893	1	0	1	4
Loma Novio	1	0	1	0	0	0
Longhorn	2	398	0	0	1	3
Lentz (Bexar Co.)	1	65	0	0	0	0
Luby	3	371	0	0	0	2
Luling	2	215	0	0	0	1
Lytton Springs	0	0	0	0	0	1
Magnolia City	0	0	0	0	0	1
McCampbell	16	2,756	0	1	1	5
McFaddin	2	223	0	0	0	0
Mellon Creek	1	0	1	0	0	1
Mirando Valley	5	347	0	0	0	3
Minnie Bock	1	119	0	0	2	3
North Luby	1	0	1	0	0	1
North Killam	2	168	0	0	0	1
Oakville	1	0	1	0	1	1
Piedra De Lumbre	5	1,250	0	0	1	1
Plymouth	0	0	0	0	0	1
Rancho Sollo	1	85	0	0	1	1
Refugio	1	29	0	0	1	0
Reynolds	1	55	0	0	0	2
Richard King	1	84	0	0	0	2
Rincon	0	0	0	0	0	1
Rockdale	1	4	0	0	0	1
Salt Flat	2	69	0	0	2	3
Samfordyce	2	215	0	0	1	1
San Domingo	0	0	0	0	0	1
Saxet	3	364	0	0	1	2
South Alfred	2	181	1	0	0	1
South Calliham	1	0	1	0	0	0
South Clara Driscoll	1	0	1	0	0	1
South Ricaby	1	0	1	0	0	1
Sun	1	96	0	0	0	1
S.R.C.	2	137	0	0	1	1
Tomoconnor	1	715	0	0	0	1
Volpe	1	50	0	0	0	1
Weser	0	0	0	0	0	1
White Creek	3	165	1	0	1	2
Miscellaneous	33	0	33	0	15	43
Ttl. June	172	15,077	50	2	46	135
Ttl. May	264	19,971	87	8	49	146
Difference	92	4,894	37	6	3	11

TEXAS PANHANDLE

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Armstrong	0	0	0	0	0	1
Carson	6	1,581	1	1	0	8
Castro	0	0	0	0	1	0
Conningsworth	0	0	0	0	0	1
Deaf Smith	0	0	0	0	0	1
Dickens	0	0	0	0	0	3
Floyd	0	0	0	0	0	1
Gray	8	1,054	0	3	7	24
Hutchinson	12	3,352	0	3	5	37
Lipscomb	0	0	0	0	0	1
Moore	4	0	0	4	2	6
Motley	0	0	0	0	0	1
Potter	2	0	0	2	0	0
Roberts	0	0	0	0	0	1
Wheeler	1	20	0	0	1	3
Ttl. June	33	6,007	1	13	16	88
Ttl. May	30	7,622	1	7	17	92
Difference	3	1,615	0	6	1	4

EASTERN TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	2	117	0	1	1	7
Angelina	1	5	0	0	0	1
Camp	1	0	1	0	0	0
Dallas	0	0	0	0	0	1
Ellis	0	0	0	0	0	1
Falls	0	0	0	0	0	2
Franklin	1	389	0	0	0	3
Freestone	3	0	3	0	0	3
Grayson	0	0	0	0	1	5
Gregg	21	1,159	0	0	3	7
Henderson	1	0	1	0	0	6
Hill	0	0	0	0	0	1
Houston	4	295	0	1	0	3
Kaufman	2	0	2	0	1	3
Leon	1	48	0	0	1	1
Limestone	0	0	0	0	0	1
Nacogdoches	0	0	0	0	0	1
Navarro	1	0	1	0	1	1
Rains	0	0	0	0	0	1
Red River	0	0	0	0	0	2
Robertson	0	0	0	0	1	0
Rusk	9	386	0	0	0	5
Smith	0	0	0	0	0	1
Titus	3	1,050	0	0	0	1
Trinity	0	0	0	0	0	1
Upshur	1	42	0	0	0	1
Van Zandt	0	0	0	0	1	1
Ttl. June	51	3,491	8	2	10	60
Ttl. May	65	3,239	12	6	11	51
Difference	14	252	4	4	1	9

WEST CENTRAL AND NORTH TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	25	4,815	10	0	10	26
Baylor	2	0	2	0	2	2
Bosque	0	0	0	0	1	0
Brown	4	0	4	0	0	3
Callahan	7	0	7	0	0	6
Clay	15	652	8	0	6	11
Coleman	2	160	0	0	2	2
Comanche	3	146	0	0	0	1
Cooke	13	1,925	3	0	15	17
Coryell	0	0	0	0	0	1
Denton	0	0	0	0	0	1
Erath	0	0	0	0	2	1
Eastland	2	0	2	0	1	10
Fisher	0	0	0	0	0	1
Foard	0	0	0	0	0	1
Hamilton	0	0	0	0	0	2
Hardeman	1	72	0	0	1	0
Haskell	1	0	1	0	0	1
Hood	0	0	0	0	0	2
Jack	9	1,109	4	0	5	6
Johnson	0	0	0	0	0	1
Jones	23	32,574	4	0	14	29
Lampasas	0	0	0	0	0	1
Montague	4	135	3	0	3	8
Palo Pinto	3	135	1	0	1	4
Parker	0	0	0	0	0	2
Shackelford	16	4,865	10	0	4	19
Stephens	3	0	3	0	3	6
Tarrant	0	0	0	0	1	1
Taylor	4	0	3	1	0	1
Throckmorton	1	0	1	0	0	3
Wichita	49	19,430	7	0	28	47
Wilbarger	4	242	2	0	0	6
Wise	0	0	0	0	0	4
Young	25	7,155	15	0	11	22
Ttl. June	216	73,415	90	1	110	248
Ttl. May	271	59,405	132	8	111	243
Difference	55	14,010	42	7	1	5

ROCKY MOUNTAIN AREA

Colorado

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	1	1
Archuleta	0	0	0	0	0	3
Boulder	0	0	0	0	0	2
Fremont	0	0	0	0	0	2
Huerfano	0	0	0	0	0	5

La Plata	0	0	0	0	0	1
Las Animas	0	0	0	0	0	2
Mesa	0	0	0	0	0	1
Moffat	0	0	0	0	0	4
Park	0	0	0	0	0	1
Pueblo	0	0	0	0	1	2
Rio Blanco	0	0	0	0	0	2
Routt	0	0	0	0	0	2
Misc.	0	0	0	0	0	6
Ttl. June	0	0	0	0	2	34
Ttl. May	3	30	2	0	2	33
Difference	3	30	2	0	0	1

Wyoming

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	0	9
Campbell	0	0	0	0	0	2
Carbon	0	0	0	0	0	2
Converse	0	0	0	0	0	7
Fremont	0	0	0	0	1	6
Natrona	0	0	0	0	0	3
Niobrara	2	680	0	0	1	14
Park	2	722	0	0	0	2
Sublette	0	0	0	0	1	5
Sweetwater	0	0	0	0	0	4
Uinta	0	0	0	0	0	4
Weston	0	0	0	0	0	11
Misc.	0	0	0	0	0	3
Ttl. June	4	1,402	0	0	3	72
Ttl. May	11	7,211	3	0	4	73
Difference	7	5,809	3	0	1	1

Montana

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Ttl.
Big Horn	0	0	0	0	0	2
Carbon	0	0	0	0	0	7
Cascade	1	0	1	0	0	0
Fergus	0	0	0	0	0	2
Glacier	13	1,776	1	1	4	10
Hill	0	0	0	0	0	2
Petroleum	0	0	0	0	0	2
Teton	2	0	2	0	0	1
Toole	6	102	2	0	2	13
Yellowstone	1	0	1	0	0	0
Misc.	0	0	0	0	0	9
Ttl. June	23	1,878	7	1	6	48
Ttl. May	8	509	0	1	3	54
Difference	15	1,369	7	0	3	6

Utah

Summary of Field Operations

Total June	0	0	0	0	1	4
Total May	0	0	0	0	1	3
Difference	0	0	0	0	0	1

New Mexico

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bernalillo	0	0	0	0	0	2
McKinley	0	0	0	0	0	2
San Juan	2	101	0	0	0	11
San Miguel	0	0	0	0	0	3
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	2
Valencia	0	0	0	0	0	2
Lea	34	10,088	1	1	6	54
Eddy	8	362	2	0	3	42
Chaves	0	0	0	0	1	6
Luna	0	0	0	0	0	1
Ttl. June	44	10,551	3	1	10	126
Ttl. May	48	21,297	13	1	9	138
Difference	4	10,746	10	0	1	12

NORTH LOUISIANA

Summary of Field Operations

Parish—	Comp.	Prod.	Dry	Gas*	Rgr.	Dlg.
Bienville	2	0	0	2	0	2
Bossier	1	0	1	0	0	1
Caddo-Rodessa	2	435	0	0	2	0
Caddo-other	20	1,830	9	0	9	14
Caldwell	0	0	0	0	1	0
Catahoula	0	0	0	0	0	1
Claiborne	2	5	1	0	0	0
De Soto	1	10	0	0	2	2
Grant	0	0	0	0	1	0
La Salle	1	0	1	0	3	1
Morehouse	2	0	0	2	0	0
Natchitoches	0	0	0	0	1	0
Ouachita	0	0	0	0	0	1
Red River	0	0	0	0	1	0
Sabine	2	275	1	0	4	5
Tensas	0	0	0	0	1	1
Union	2	0	1	1	2	0
Webster	2	2,035	0	0	0	11
Ttl. June	36	3,180	14	5	27	39
Ttl. May	57	6,985	20	6	25	42
Difference	21	3,805	6	1	2	3

*Gas production: Bienville Parish 100,000,000 cu. ft.; Morehouse Parish 5,000,000 cu. ft.; Union Parish 7,000,000 cu. ft.

COASTAL LOUISIANA

Summary of Field Operations

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Abbeville	1	211	0	0	0	2
Bancroft	4	1,089	0	0	1	2
Bateman Lake	0	0	0	0	0	1
Bay St. Elaine	0	0	0	0	0	1
Bel	1	0	0	1	0	0
Black Bayou	0	0	0	0	0	1
Calliou Island	1	0	1	0	1	0
Cameron Meadows	1	125	0	0	0	1
Chalkley	3	301	1	0	1	1
Creole	1	281	0	0	0	1
Chacahoula	0	0	0	0	1	1
Chareton	2	210	0	0	1	3
Cheneyville	1	565	0	0	0	2
Convent	0	0	0	0	0	2
Darrow	0	0	0	0	0	1
Dog Lake	1	32	0	0	0	1
DeLarge	0	0	0	0	0	1
East Baton Rouge	5	940	1	1	1	8
Edgerly	0	0	0	0	0	1
Eola	3	2,346	0	0	1	8
Garden Island	1	240	0	0	1	0
Gibson	1	69	0	0	0	0
Gillis	1	289	0	0	0	1
Golden Meadows	0	0	0	0	1	8
Grand Bay	1	770	0	0	1	1
Grand Lake	0	0	0	0	0	2
Hackberry	2	505	1	0	1	6
Horseshoe Bayou	0	0	0	0	0	1
Jefferson Island	1	292	0	0	0	2
Jennings	4	1,171	0	0	0	5
Kenilworth	0	0	0	0	0	1
Lake Barre	1	0	1	0	1	0
Lafitte	1	450	0	0	1	1
Lake Long	1	118	0	0	0	1
Lake Hermitage	0	0	0	0	0	1
Lake Mongoulois	0	0	0	0	0	1
LaPice	1	47	0	0	0	0
Lake Pelto	1	648	0	0	1	0
Leesville	0	0	0	0	1	0
Lirette	2	0	1	1	0	1
N. Crowley	1	0	1	0	1	0
N. Tepetate	0	0	0	0	0	2
New Iberia	4	612	0	0	1	4
Paradis	1	120	0	0	0	0
Port Barre	0	0	0	0	1	3
Potash	0	0	0	0	0	1
Quarantine Bay	2	770	0	0	1	1
Raceland	1	156	0	0	0	1
Roanoke	1	0	1	0	0	0
South Houma	1	615	0	0	0	0
Sorrento	0	0	0	0	0	1
S. Roanoke	0	0	0	0	0	1
Starks	0	0	0	0	0	1
Sulphur	0	0	0	0	0	2
Valentine	0	0	0	0	0	2
Venice	0	0	0	0	0	1
Villa Platte	7	2,096	1	0	2	3
Vinton	1	0	1	0	0	0
Welsh	0	0	0	0	0	1
W. Gueydan	0	0	0	0	0	1
West Lake Verret	0	0	0	0	0	1
White Castle	0	0	0	0	0	1
Woodlawn	1	85	0	0	0	3
Miscellaneous	5	0	5	0	4	23
Ttl. June	67	15,153	15	3	25	123
Ttl. May	54	9,706	21	0	24	124
Difference	13	5,447	6	3	1	1

MISSOURI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrew	0	0	0	0	0	2
Bollinger	0	0	0	0	0	1
Butler	0	0	0	0	0	1
Cass	1	0	1	0	0	0
Clay	1	0	1	0	0	1
Clinton	0	0	0	0	0	1
DeKalb	0	0	0	0	0	1
Hickory	0	0	0	0	0	1
Holt	0	0	0	0	0	2
Jackson	0	0	0	0	0	1
Livingston	0	0	0	0	0	1
Madison	0	0	0	0	0	1
Mercer	0	0	0	0	1	0
Platte	1	0	1	0	0	2
Putnam	0	0	0	0	0	1
Schuyler	0	0	0	0	1	0
Shelby	0	0	0	0	0	1
Sullivan	0	0	0	0	1	0
Ttl. June	3	0	3	0	3	17
Ttl. May	3	0	3	0	5	12
Difference	0	0	0	0	2	5

EAST BORDER TEXAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Cass	0	0	0	0	0	1
Harrison	0	0	0	0	2	1
Marion-Rodessa	4	1,750	0	0	1	2
Marion, other	1	120	0	0	2	0
Shelby	0	0	0	0	2	0
Ttl. June	5	1,870	0	0	7	4
Ttl. May	7	890	3	2	6	9
Difference	2	980	3	2	1	5

ARKANSAS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bradley	0	0	0	0	1	0
Calhoun	1	0	1	0	0	0
Clay	0	0	0	0	1	0
Columbia	9	4,885	0	0	1	18
Craighead	0	0	0	0	0	1
Hot Springs	0	0	0	0	1	0
Lafayette	4	0	4	0	0	4
Little River	0	0	0	0	2	0
Lonoke	0	0	0	0	4	0
Miller-Rodessa	0	0	0	0	2	0
Miller, other	1	0	1	0	0	0
Nevada	2	105	0	0	0	0
Ouachita	0	0	0	0	1	1
Pike	0	0	0	0	0	1
Saline	0	0	0	0	1	0
Sevier	0	0	0	0	1	0
Union	2	130	1	0	1	10
White	0	0	0	0	1	0
Ttl. June	19	5,120	7	0	17	35
Ttl. May	21	9,060	4	0	18	36
Difference	2	3,940	3	0	1	1

MISSISSIPPI

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Calhoun	0	0	0	0	1	0
Clark	0	0	0	0	0	1
Hinds	1	0	1	0	1	0
Humphreys	0	0	0	0	0	1
Lafayette	0	0	0	0	1	0
Lowndes	1	0	1	0	0	0
Simpson	0	0	0	0	1	0
Ttl. June	2	0	2	0	4	2
Ttl. May	1	0	1	0	4	4
Difference	1	0	1	0	0	2

FLORIDA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Baker	0	0	0	0	1	0
Levy	0	0	0	0	0	1
Munroe	1	0	1	0	0	0
Nassau	0	0	0	0	0	1
Ttl. June	1	0	1	0	1	2
Ttl. May	0	0	0	0	0	1
Differences	1	0	1	0	1	1

GEORGIA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Clinch	0	0	0	0	0	1
Ttl. June	0	0	0	0	0	1
Ttl. May	1	0	1	0	0	1
Difference	1	0	1	0	0	0

ILLINOIS

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Alexander	0	0	0	0	0	1
Bond	3	0	3	0	1	4
Brown	0	0	0	0	0	1
Champaign	0	0	0	0	0	2
Christian	0	0	0	0	1	1
Clark	2	0	2	0	1	7
Clay	20	9,219	1	0	3	10
Clinton	3	0	3	0	0	3
Coles	2	0	2	0	0	2
Crawford	2	0	2	0	0	3
Cumberland	2	0	2	0	0	1
Edgar	0	0	0	0	0	1
Edwards	1	0	1	0	0	3
Effingham	0	0	0	0	0	1
Fayette	83	15,447	3	0	12	58
Ford	0	0	0	0	0	1
Franklin	1	200	1	0	0	2
Gallatin	2	0	2	0	0	1
Hamilton	0	0	0	0	0	1
Jasper	0	0	0	0	0	1
Jefferson	2	262	1	0	0	9
Johnson	0	0	0	0	0	1
Knox	0	0	0	0	0	1
Macoupin	3	0	3	0	0	0
Lawrence	3	0	2	1	0	8
Madison	1	0	1	0	0	4
Marion	106	49,007	4	0	5	94
Massac	0	0	0	0	0	2
McLean	0	0	0	0	0	1
McDonough	1	0	1	0	0	3
Monroe	1	0	1	0	0	4
Montgomery	2	0	2	0	0	4
Moultrie	0	0	0	0	0	2
Perry	0	0	0	0	1	4
Pike	0	0	0	0	0	2
Randolph	0	0	0	0	0	2
Richland	5	384	0	0	6	16
Saline	2	0	2	0	0	2
Shelby	1	0	1	0	0	2
St. Clair	10	390	0	0	0	7
Tazewell	0	0	0	0	0	1
Wabash	2	48	1	0	2	10
Warren	0	0	0	0	0	1
Washington	10	349	5	0	0	12
Wayne	23	5,203	4	0	6	34
White	0	0	0	0	2	8
Williamson	0	0	0	0	0	1
Ttl. June	293	80,509	49	1	40	340
Ttl. May	307	73,169	49	1	34	384
Difference	14	7,340	0	0	6	44

EASTERN KENTUCKY

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Powell	8	51	1	0	1	2
Magoffin	0	0	0	0	0	2
Lee	3	27	1	0	0	5
Knott	4	0	1	3	0	2
Martin	0	0	0	0	2	2
Floyd	7	0	0	7	1	3
Estill	1	5	0	0	0	0
Pike	3	0	0	3	2	2
Knox	1	0	0	1	1	3
Ttl. June	27	83	3	14	7	21
Ttl. May	20	77	5	7	6	38
Difference	7	6	2	7	1	17

INDIANA

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Spencer	3	24	0	1	0	9
Vanderburgh	1	0	1	0	0	2
Posey	4	615	1	1	2	9
Warrick	1	0	1	0	0	0
Pike	0	0	0	0	0	6
Gibson	8	2,392	1	0	1	18
Lagrange	0	0	0	0	1	0
Whiteley	0	0	0	0	0	1
Adams	0	0	0	0	1	0
Jay	1	0	1	0	0	3
Madison	0	0	0	0	0	1
Hancock	0	0	0	0	0	1
Vigo	0	0	0	0	0	4
Sullivan	1	0	1	0	0	2
Jennings	0	0	0	0	0	1
Knox	0	0	0	0	1	6
Martin	0	0	0	0	0	1
Daviess	0	0	0	0	0	3
DuBois	1	0	1	0	0	0
Perry	1	0	1	0	0	0
White	0	0	0	0	0	1
Ttl. June	21	3,031	8	2	6	68
Ttl. May	30	1,439	16	3	7	57
Difference	9	1,592	8	1	1	11

LIMA FIELD

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	1	0	1	0	0	0
Auglaize	0	0	0	0	0	1
Franklin	0	0	0	0	1	0
Henry	0	0	0	0	0	1
Putnam	1	5	0	0	1	1
Seneca	0	0	0	0	1	1
Wood	0	0	0	0	0	3
Wyandot	1	0	1	0	0	0
Ttl. June	3	5	2	0	3	7
Ttl. May	4	6	3	0	1	10
Difference	1	1	1	0	2	3

OHIO

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	1	0	0	1	0	1
Athens	12	0	4	8	4	10
Carrol	1	0	0	1	0	0
Columbiana	1	0	0	1	0	0
Coshocton	1	100	0	0	3	0
Cuyahoga	3	0	1	2	2	6
Fairfield	2	0	1	1	0	3
Gallia	1	0	0	1	1	2
Guernsey	4	0	1	3	2	3
Harrison	1	0	1	0	0	0
Hocking	2	50	1	0	0	1
Holmes	4	12	2	2	0	3
Jackson	1	0	0	1	0	0
Jefferson	1	10	0	0	0	0
Knox	3	83	1	1	6	6
Lawrence	1	0	0	1	1	1
Licking	7	132	1	4	4	21
Lorain	1	0	0	1	1	2
Mahoning	0	0	0	0	0	1
Medina	5	75	2	0	3	7
Meigs	3	0	1	2	0	4
Monroe	4	2	1	2	1	3
Morgan	0	0	0	0	2	2
Muskingum	4	58	0	1	0	3
Noble	10	7	4	4	1	10
Perry	3	0	2	1	2	1
Stark	1	0	0	1	2	5
Summit	0	0	0	0	1	1
Tuscarawas	1	0	0	1	1	2
Washington	9	2	4	4	2	14
Wayne	0	0	0	0	0	1
Ttl. June	87	531	27	44	39	113
Ttl. May	80	289	23	44	29	125
Difference	7	242	4	0	10	12

EASTERN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegany	69	96	0	0	0	29
Bradford	172	298	0	0	11	42
N. Y.-Pa. gas area	7	0	5	2	7	27
Middle district	19	21	0	2	2	8
Butler-Armstrong	5	35	0	0	2	13
S.W. Penna.	18	1	4	13	7	51
S.E. Ohio	40	299	4	16	9	38
W. Va.	47	38	5	35	30	130
Ttl. June	377	788	18	68	77	338
Ttl. May	349	544	18	59	80	302
Difference	28	244	0	9	3	36

MICHIGAN

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Bangor	2	0	2	0	0	3
Bentley	1	0	1	0	0	1
Bloomingdale	9	2,772	4	0	1	8
Clayton	1	0	0	1	0	2
Crystal	0	0	0	0	0	1
Edmore	0	0	0	1	0	1
Freeman	9	15,820	1	0	6	11
Gobles	5	500	4	0	0	1
Kent County	24	24,266	0	0	4	20
Hopkinsburg	0	0	0	0	1	1
Loomis	3	113	0	0	0	4
New Salem	16	3,798	1	0	1	0
S.E. Columbia	7	4,300	1	0	0	8
Salem	7	2,654	0	0	1	4
Deerfield	1	0	0	1	0	0
New Haven	1	0	0	1	0	0
Sherman	0	0	0	0	0	1
Stewart	1	0	1	0	0	2
Skunk Lake	1	0	1	0	0	1
Tallmadge	0	0	0	0	1	1
Trowbridge	0	0	0	0	0	1
West Branch	1	40	0	0	0	3
Wise	0	0	0	0	0	1
Wisner	0	0	0	0	0	2
Wildcats	34	0	34	0	4	46
Ttl. June	123	54,263	50	4	19	122
Ttl. May	138	52,714	59	5	14	144
Difference	15	1,549	9	1	5	22

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Hogan Pet., No. 1-A Zabala, Casmalia, Santa Barbara	33- 9-34	2,815	redrlg. 1,670
Sun-Bell Drlg., No. 1 Smith, Lompoc, Santa Barbara	29- 8-34	122	sd. sh. drlg.
Arnold, E. C., No. 2 Careaga, Los Alamos, Santa Barb.	8- 8-33	6,838	cmtd. fsg.
Field, O. C., No. 1 White, Cat Canyon, Santa Barbara	21- 9-33	6,865	br. sh. drlg.
General Pet., No. 4 More, Goleta, Santa Barbara	15- 4-28	4,757	redrlg. 4,100
Trans-Oceanic Oil, No. 3 Mdivani, Mesa, Santa Barb.	28- 4-27	1,575	pump. 52 bd.d.
Richfield Oil., No. 2 Marcos, Sisquoc, Santa Barbara	29- 6-29	1,199	sd. sh. drlg.
St. Louis Oil, No. 1 Williamson, Sespe, Ventura	1- 4-20	1,994	cleaning out
Section 20 Oil, No. 21, Sespe, Ventura	20- 5-19	2,941	cleaning out
Speik Oil, No. 2 Hill, Sespe, Ventura	33- 5-19	3,790	sd. sh. drlg.
Galveston Oil, No. 1 Basola, Bardsdale, Ventura	5- 3-19	3,139	redrlg. 2,990
Texas Co., No. 137 Shiells, Shiells Canyon, Ventura	4- 3-19	3,272	redrlg. 2,958
El Rancho Oil, No. 3 Elkins, Shiells Canyon, Ventura	9- 3-19	3,731	pump. 120 b.d.
Continental Oil, No. 11 Grubb, San Miguelito, Ventura	24- 3-24	6,645	redrlg. 6,550
C. C. M. Oil, No. 7-A Hobson, Padre Canyon, Ventura	15- 3-24	6,000	flow. 10 b.d.
C. C. M. Oil, No. 27-B Hobson, Rincon, Ventura	16- 3-24	4,917	P.B. 4,850
Rincon Dev., No. 82-4 Shudde, Rincon, Ventura	Tideland	2,078	cleaning out
Tide Water A. O., No. 40 V.L.W., Ventura Ave., Vent.	25- 3-23	10,769	P.B. 10,678
Tide Water A. O., No. 42 V.L.W., Ventura Ave., ent.	23- 3-23	1,966	sd. sh. drlg.
Tide Water A. O., No. 14 McGonigle, Vent. Ave., Vent.	23- 3-23	10,285	hd. sh. drlg.
Tide Water A. O., No. 15 McGonigle, Vent. Ave., Vent.	23- 3-23	4,284	sd. sh. drlg.
Tide Water A. O., No. 84 Lloyd, Ventura Ave., Vent.	27- 3-23	7,325	sd. sh. drlg.
Tide Water A. O., No. 124 Lloyd, Ventura Ave., Vent.	23- 3-23	10,094	sd. sh. drug.
Tide Water A. O., No. 8 Hartman, Ventura Ave., Vent.	22- 3-23	8,810	cleaning out
Shell Oil, No. 100 Taylor, Ventura Ave., Ventura	29- 3-23	5,377	sd. sh. drlg.
Shell Oil Co., No. 34 Edison, Ventura Ave., Ventura	21- 3-23	5,181	sd. sh. drlg.
Brit. Amer. Pet., No. 8 Hartman, Ventura Ave., Vent.	21- 3-23	3,997	sd. sh. drlg.
Lloyd Corp., No. 3 Dabney, Ventura Ave., Ventura	23- 3-23	1,968	sd. sh. drlg.
Emigrant Oil, No. 1 Den, Devil's Den, Kern	24-25-18	4,278	P.B. 4,250
Belridge Oil, No. 35-38, North Belridge, Kern	35-27-20	8,291	O.S. drlg.
Belridge Oil, No. 28-17, North Belridge, Kern	28-27-20	6,370	sd. sh. drlg.
Belridge Oil, No. 26-25, North Belridge, Kern	26-27-20	8,137	flow. 850 b.d.
Tide Water A. O., No. 21, North Belridge, Kern	21-27-20	7,500	sd. sh. drlg.
Richfied Oil, No. 3 Belridge, North Belridge, Kern	22-27-20	8,353	cmtd. 8,353
Calif. Expl., No. 2 Occidental, Lost Hills, Kern	24-26-20	6,660	sd. sh. drlg.
Standard Oil, No. 2-2 Tulare Farms, Delano, Kern	34-24-23	2,470	20,600 m.c.f.
Standard Oil, No. 2-3 Tulare Farms, Delano, Kern	35-24-23	2,463	sd. sh. drlg.
Standard Oil, No. 2-4 Tulare Farms, Delano, Kern	34-24-23	2,470	10,345 m.c.f.
Trico O. & G., No. 2 T.G.&T., Delano Kern	2-25-23	2,416	sd. sh. drlg.
Dilamar Oil, No. 3 Quinn, Jasmin, Kern	15-25-27	2,902	cleaning out
Sieman, Fred, No. 1 Metro, Edison, Kern	6-30-29	4,156	P. 120 B.D.
Grizzly Bear Oil, No. 3 Kelley, Round Mountain, Kern	6-28-29	1,709	fish tubing
Mayes, A. S., No. 1 Coffee, Round Mountain, Kern	6-28-29	1,799	gr. sh. drlg.
Hast Oil, No. 3 Kern, Kern River, Kern	34-28-28	432	deepening
D. B. K., No. 6 Kern, Kern River, Kern	34-28-28	382	sd. sh. drlg.
Grogg & Fisher, No. 1 Kern, Kern River, Kern	27-28-28	438	idle
Lang, E., No. 1 S.P., Mount Poso, Kern	3-27-28	1,576	gr. sd. drlg.
Texas Co., No. 2 Jewett, Arvin, Kern	16-31-29	5,161	sd. sh. drlg.
Standard Oil, No. 3 Jewett, Arvin, Kern	16-31-29	2,754	sd. sh. drlg.
Standard Oil, No. Jewett, Arvin, Kern	16-31-29	4,386	sd. sh. drlg.
Standard Oil, No. 1 Tupman, Arvin, Kern	22-31-29	4,874	sd. sh. drlg.
Universal Cons'd. Oil, No. 2 Derby, Arvin, Kern	15-31-29	6,119	O.S. drlg.
Western Gulf Oil, No. 42-B, KCL, Fruitvale, Kern	14-29-27	2,945	cleaning out
Meridian Pet., No. 1 Deep Test, Fruitvale, Kern	23-29-27	4,790	sd. sh. drlg.
Getty, George F., Inc., No. 1 Jannsen, Wasco, Kern	7-27-24	10-751	sd. sh. drlg.
Union Oil, No. 61-34, KCL, Rio Bravo, Kern	34-28-25	9,662	sd. sh. drlg.
Superior Oil, No. 1 Fink, Rio Bravo, Kern	27-28-25	10,915	sd. sh. drlg.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	9,002	cmtd. 8,186
Standard Oil, No. 11-18, KCL, Greeley, Kern	18-29-26	10-240	hd. sh. drlg.
Standard Oil, No. 11-19, KCL, Greeley, Kern	18-29-26	10,005	sd. sh. drlg.
Standard Oil, No. 12-6, KCL, Greeley, Kern	30-29-26	11,942	cmtd. 11,900
Continental Oil, No. 2-D, KCL, Bellevue, Kern	14-30-26	11,100	hd. sh. drlg.
Shell Oil, No. 23-28-B, KCL, Canal, Kern	28-30-26	7,990	sd. sh. drlg.
Shell Oil, No. 25-14-A, KCL, Canal, Kern	14-30-25	8,260	flow 1,188 b.d.
General Pet., No. 1 Sullivan, Strand, Kern	12-29-25	3,794	sd. sh. drlg.
Ohio Oil, No. 13-E, KCL, Canal, Kern	13-30-25	7,640	sd. sh. drlg.
Richfield Oil, No. 12-33-A, KCL, Tupman, Kern	33-30-25	8,197	sd. sh. drlg.
Standard Oil, No. 21-1, KCL, Tupman, Kern	19-30-25	9,460	chert drlg.
Richfield Oil, No. 14-3-B, KCL, Cole's Levee, Kern	3-31-25	9,120	hd. sh. drlg.
Standard Oil, No. 20-1, KCL, Cole's Levee, Kern	9-31-25	9,216	flow 2,150 b.d.
Ohio Oil, No. 3-F, KCL, Cole's Levee, Kern	11-31-25	9,160	hd. sh. drlg.
Union Oil Co., No. 52-11, KCL, Cole's Levee, Kern	11-31-25	9,160	sd. sh. drlg.
Standard Oil, No. 216 Tupman, Elk Hills, Kern	36-30-24	2,975	cleaning out
Standard Oil, No. 218-15-D, fee, Midway-Sunset, Kern	15-32-24	3,502	cleaning out
Gibson Oil, No. 6 O'Brien, Midway-Sunset, Kern	6-11-23	1,393	sd. sh. drlg.
Quality Oil, No. 6 W.P., Midway-Sunset, Kern	27-32-23	1,095	sd. sh. drlg.
General Pet., No. 1 B.V.A., Midway-Sunset, Kern	1-32-24	6,798	sd. sh. drlg.
National Oil, No. 33 Sunset, Midway-Sunset, Kern	35-32-23	1,297	br. sh. drlg.
Par O. & G., No. 1 Hager, Midway-Sunset, Kern	16-31-22	3,480	sd. sh. drlg.
West. Gulf Oil, No. 1 Panhandle, Buena V. Lake, Kern	3-32-26	9,490	sd. sh. drlg.
Richfield Oil, No. 1, KCL, Wheeler Ridge, Kern	28-11-20	11,004	cleaning out
Continental Oil, No. 1-F, KCL, San Emidio, Kern	5-10-21	6.198	sd. sh. drlg.
Bannow, L. E., No. 1 Irwin, San Emidio, Kern	15-10-23	1,887	fish D.P.
Shell Oil, No. 52-2-13-A, KCL, San Emidio, Kern	13-11-22	4-788	sd. sh. drlg.
Petrol Corp., No. 33-5 Reserve, Tejon, Kern	33-11-19	8,946	redrlg. 8,180
Shell Oil, No. 48-30 Port Costa, Turk, Fresno	30-17-16	9,970	gr. sd. drlg.
Superior Oil, No. 1 S.P.L., Turk, Fresno	15-18-16	8,240	gr. sd. drlg.
Texas Co., No. 1 Loescher, Burrell, Fresno	12-17-16	8,630	br. sh. drlg.
Richfield Oil, No. 1 Gulf, Cantua, Fresno	4-17-15	133	sd. sh. drlg.
Gatos Creek Oil, No. 1 Cable, Gatos Creek, Fresno	19-19-13	116	sd. sh. drlg.
Union Oil, No. 86-18 Cook, N.E. Coalinga, Fresno	18-19-16	5,770	sd. sh. drlg.
Bandini Pet., No. 48-18 Webb, N.E. Coalinga, Fresno	18-19-16	7,197	br. sh. drlg.
Amerada Pet., No. 26-17 S.P.L., N.E. Coalinga, Fresno	17-19-16	8,940	gr. sd. drlg.
Lytle, R. S., Agt., No. 48-7-F, S.E. Coalinga, Fresno	7-20-16	7,386	O.S. drlg.
Texas, Co., No. 2 Exeter fee, S.E. Coalinga, Fresno	6-20-16	7,370	sd. sh. drlg.
Standard Oil, No. 84-13-C fee, S.E. Coalinga, Fresno	13-20-15	6,894	sd. sh. drlg.
Superior Oil, No. 2 Hight, S.E. Coalinga, Fresno	8-20-16	7,340	hd. sh. drlg.
Superior Oil, No. 1 P.V.F., S.E. Coalinga, Fresno	22-20-15	8,480	sd. sh. drlg.
Holly Dev., No. 82-12-C, S.E. Coalinga, Fresno	12-20-15	6,151	hd. sh. drlg.
K. N. D. A., No. 61-34-J, Kettleman North, Fresno	34-21-17	8,611	fish D.P.
K. N. D. A., No. 4-18-Q, Kettleman North, Kings	18-22-18	8,295	swabbing
K. N. D. A., No. 2-20-Q, Kettleman North, Kings	20-22-18	7,700	O.S. drlg.
K. N. D. A., No. 4-22-Q, Kettleman North, Kings	22-22-18	6,920	br. sh. drlg.
K. N. D. A., No. 47-22-Q, Kettleman North, Kings	22-22-18	4,996	sd. sh. drlg.
K. N. D. A., No. 4-26-Q, Kettleman North, Kings	26-22-18	7,935	O.S. drlg.
Standard Oil, No. 2-19-J, Kettleman North, Fresno	19-21-17	7,000	sd. sh. drlg.
Standard Oil, No. 27-19-J, Kettleman North, Fresno	19-21-17	8,912	cleaning out
Standard Oil, No. 27-7-Q, Kettleman North, Kings	7-22-18	4,274	sd. sh. drlg.
Standard Oil, No. 87-7-Q, Kettleman North, Kings	7-22-18	8,000	hd. sh. drlg.
Standard Oil, No. 52-17-Q, Kettleman North, Kings	17-22-18	8,665	sd. sh. drlg.
Standard Oil, No. 63-17-Q, Kettleman North, Kings	17-22-18	5,569	sd. sh. drlg.
Standard Oil, No. 85-17-Q, Kettleman North, Kings	17-22-18	6,790	cmtd. 6,781
Standard Oil, No. 87-17-Q, Kettleman North, Kings	17-22-18	7,181	sd. sh. drlg.
Standard Oil, No. 63-21-Q, Kettleman North, Kings	21-22-18	5,760	br. sh. drlg
Standard Oil, No. 72-21-Q, Kettleman North, Kings	21-22-18	8,630	O.S. drlg.
Standard Oil, No. 83-21-Q, Kettleman North, Kings	21-22-18	7,785	flow 1,396 b.d.
Newton, S. M., No. 1 Stafford, Panorama, S. L. Obispo	18-31-21	3,340	sd. sh. drlg.
Standard Oil, No. 1 Calpac, Rio Vista, Solano	15- 5-2	5,891	gr. sd. drlg.
Buttes Oilfields, Inc., No. 5 Butte, Sut. Buttes, Sutter	1-15-1	5,304	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
D. & B. Oil, No. 5 Lomita, Torrance, Los Angeles	30- 4-13	5,351	sd. sh. drlg.
Elliott, D. W., No. 8 Kettler, Torrance, Los Angeles	23- 4-14	5,190	bailing
L. M. S. Oil, No. 2-A Kettler, Torrance, Los Angeles	23- 4-14	2,997	sd. sh. drlg.
Rolling Hills Pet., No. 1 Weston, Palos Verdes, L. A.	27- 4-14	5,620	sd. sh. drlg.
Union Oil, No. 69 Callender, Dominguez, Los Angeles	32- 3-13	7,097	sd. sh. drlg.
Union Oil, No. 70 Callender, Dominguez, Los Angeles	29- 3-13	4,783	sd. sh. drlg.
Shell Oil, No. 32 Reyes, Dominguez, Los Angeles	33- 3-13	4,335	cmtd. 4,098
Shell Oil, No. 99 Reyes, Dominguez, Los Angeles	33- 3-13	1,019	sd. sh. drlg.
Union Oil. No. 32 Rosecrans, Los Angeles	19- 3-13	7,610	flow 315 b.d.
Universal Cons'd., No. 17 Trust, Rosecrans, Los An.	18- 3-13	7,835	O.S. drlg.
Royalty Service Corp., No. 4 Gordon, Rosecrans, L. A.	19- 3-13	7,900	fish D.P.
King & Weymouth. No. 2 Averill, Rosecrans, L. A.	20- 3-13	7,080	sd. sh. drlg.
Averill, G. F, No. 1 Howard, Rosecrans, Los Angeles	20- 3-13	7,645	idle
South. Cal. Pet., No. 1 Slabaugh, Rosecrans, L. A.	19- 3-13	4,367	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd. cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill stem test.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., owell drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing)
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C., or W.O.C.S., waiting on cement to set.
W.O.O., waiting for orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Trans-Western Oil, No. 1 Beloil, Potrero, Los Angeles	28-	2-14	5,450	redrlg. 3,891
Casa Grande Oil, No. 1 Lopez, San Fernando, L. A.	1-	2-15	1,284	sd. sh. drlg.
Tide Water A. O., No. 11 Porter, Aliso Canyon, L. A.	27-	3-16	4,298	hd. sd. drlg.
O'Donnell, J. E., No. 1 Hammond, Newhall, L. A.	8-	3-16	5,220	sd. sh. drlg.
Redwood Oil Co., No. 1 Mitchell, Mint Canyon, L. A.	22-	4-15	269	sd. sh. drlg.
Lang, E. M., No. 1 Rupy, Castaic, Los Angeles	7-	5-16	391	sd. sh. drlg.
Barnsdall Oil, No. 6 R.S.F., Newhall, Los Angeles	27-	4-17	5,433	sd. sh. drlg.
Barnsdall Oil, No. 7 R.S.F., Newhall, Los Angeles	27-	4-17	5,850	sd. sh. drlg.
General Pet., No. 40 Ford, Wilmington, Los Angeles	4-	5-13	3,382	sd. sh. drlg.
General Pet., No. 8 S.P., Wilmington, Los Angeles	2-	5-13	2,450	sd. sh. drlg.
Long Beach Dev., No. 7-X Harbor, Wilmington, L. A.	3-	5-13	3,890	O.S. drlg.
Long Beach Dev., No. 8-X Harbor, Wilmington, L. A.	2-	5-13	3,865	sd. sh. drlg.
Long Beach Dev., No. 9-X Harbor, Wilmington, L. A.	2-	5-13	3,850	sd. sh. drlg.
Long Beach Dev., No. 10-X Harbor, Wilmington, L. A.	2-	5-13	3,870	sd. sh. drlg.
Long Beach Dev., No. 7-Y Harbor, Wilmington, L. A.	2-	5-13	2,953	sd. sh. drlg.
Long Beach Dev., No. 9-Y Harbor, Wilmington, L. A.	2-	5-13	3,084	sd. sh. drlg.
Long Beach Dev., No. 1-Z Harbor, Wilmington, L. A.	2-	5-13	3,070	sd. sh. drlg.
Long Beach Dev., No. 2-Z Harbor, Wilmington, L. A.	2-	5-13	2,475	sd. sh. drlg.
Long Beach Dev., No. 1-W Harbor, Wilmington, L. A.	3-	5-13	1,986	sd. sh. drlg.
Oakes & Combs, No. 5-D Harbor, Wilmington, L. A.	3-	5-13	3,925	C.P. 3,420
Petroleum Midway, No. 1-G Kupfer, Wilmington, L. A.	35-	4-13	3,468	cleaning out
Richfield Oil, No. 28-P.D., Wilmington, Los Angeles	3-	5-13	2,177	sd. sh. drlg.
Ring Oil, No. 3 Harbor, Wilmington, Los Angeles	33-	4-13	4,288	O.S. drlg..
Signal O. & G., No. 3-P.D., Wilmington, Los Angeles	3-	5-13	4,210	flow 400 b.d.
Signal O. & G., No. 4-P.D., Wilmington, Los Angeles	3-	5-13	4,225	O.S. drlg.
Signal O. & G., No. 2-S.P., Wilmington, Los Angeles	3-	5-13	4,115	O.S. drlg.
Sunray Oil, No. 842-2 Gilmore, Wilmington, L. A.	33-	4-13	5,775	swabbing
Union Pacific R. R., No. 103, Wilmington, L. A.	3-	5-13	2,895	flow 254 b.d.
Union Pacific R. R., No. 104, Wilmington, L. A.	3-	5-13	2,277	sd. sh. drlg.
Union Pacific R. R., No. 111, Wilmington, L. A.	3-	5-13	2,543	sd. sh. drlg.
Union Pacific R. R., No. 112, Wilmington, L. A.	3-	5-13	2,604	sd. sh. drlg.
Union Pacific R. R., No. 18-E, Wilmington, L. A.	34-	4-13	3,097	sd. sh. drlg.
Ridge Oil, No. 1 Club, Montebello, Los Angeles	3-	2-12	8,029	testing
Kern Oil, No. 25 Monterey, Montebello, Los Angeles	2-	2-12	7,659	sd. sh. drlg.
Kern Oil, No. 32 Monterey, Montebello, Los Angeles	2-	2-12	4,283	sd. sh. drlg.
Kern Oil, No. 33 Monterey, Montebello, Los Angeles	2-	2-12	3,070	sd. sh. drlg.
Kern Oil, No. 2 Eggleston, Montebello, Los Angeles	2-	2-12	7,161	testing
Kern Oil, No. 5 Mulholland, Montebello, Los Angeles	2-	2-12	3,340	sd. sh. drlg.
Kern Oil, No. 3 Taylor, Montebello, Los Angeles	2-	2-12	3,087	sd. sh. drlg.
Standard Oil, No. 4 Harvey, Montebello, Los Angeles	2-	2-12	7,618	O.S. drlg.
Standard Oil, No. 6 Braun, Montebello, Los Angeles	3-	2-12	2,998	sd. sh. drlg.
Standard Oil, No. 7 Whitehead, Montebello, L. A.	3-	2-12	5,750	sd. sh. drlg.
Standard Oil, No. 1 Kaufman, Montebello, L. A.	2-	2-12	7,275	O.S. drlg.
Union Oil, No. 4 Wilcox, Montebello, Los Angeles	2-	2-12	7,476	cmtd. 7,432
Union Oil, No. 31 La Merced, Montebello, L. A.	1-	2-12	5,994	sd. sh. drlg.
Union Oil, No. 32 La Merced, Montebello, L. A.	2-	2-12	7,660	flow 483 b.d.
Union Oil, No. 33 La Merced, Montebello, Los Angeles	2-	2-12	3,050	sd. sh. drlg.
Union Oil, No. 34 La Merced, Montebello, Los Angeles	2-	2-12	3,919	sd. sh. drlg.
Union Oil, No. 5 Howard & Smith, Montebello, L. A.	2-	2-12	6,411	redrlg. 3,570
Union Oil, No. 2 Calkins, Montebello, Los Angeles	2-	2-12	7,645	flow 555 b.d.
Union Oil, No. 5 Paul Howard, Montebello, L. A.	2-	2-12	7,620	O.S. drlg.
Graham-Loftus Oil, No. 1 South, Montebello, L. A.	11-	2-12	387	sd. sh. drlg.
Bev. Mont. Oil, No. 1 Corbett, Montebello, L. A.	11-	2-12	7,404	sd. sh. drlg.
Bev. Mont. Oil, No. 2 Meyer, Montebello, Los Angeles	11-	2-12	5,798	sd. sh. drlg.
B-A Oil Prod., No. 1 Oswald, Montebello, Los Angeles	2-	2-12	6,060	sd. sh. drlg.
McVicar & Rood, No. 2 Manz, Montebello, L. A.	2-	2-12	7,630	flow 1,080 b.d.
McVicar & Rood, No. 1 Beech, Montebello, L. A.	11-	2-12	213	sd. sh. drlg.
Pongratz Pet., No. 1 Newmark, Montebello, L. A.	3-	2-12	7,641	completing
Mont. Res. Oil, No. 1 Reservoir, Montebello, L. A.	2-	2-12	6,715	fish D.P.
Fullerton Oil, No. 1 Trustee, Montebello, L. A.	12-	2-12	5,351	sd. sh. drlg.
Fullerton Oil, No. 1 Scott, Montebello, Los Angeles	1-	2-12	3,374	sd. sh. drlg.
McKeon, John, No. 1 Cowan, Montebello, Los Angeles	1-	2-12	6,496	sd. sh. drlg.
Star Pet., No. 1 Banks, Montebello, Los Angeles	2-	2-12	7,098	sd. sh. drlg.
Caminol Co., No. 1-15 Cowan, Montebello, Los Angeles	2-	2-12	4,296	sd. sh. drlg.
Wood-Callahan Oil, No. 1 Bartlett, Montebello, L. A.	2-	2-12	6,987	sd. sh. drlg.
Bush Oil, No. 1 Alauzet, Montebello, Los Angeles	3-	2-12	7,062	O.S. drlg.
Herley-Kelly, Inc., No. 1 De Staute, Montebello, L. A.	2-	2-12	2,288	sd. sh. drlg.
Texas Co., No. 18 Baldwin, East Montebello, L. A.	6-	2-11	8,008	P.B. 6,750
Colorado Oil, No. 19 Granger, Whittier, Los Angeles	22-	2-11	5,260	sd. sh. drlg.
Taylor Prod., No. 1 Gregg, Citrus Grove, Los Angeles	17-	2-11	6,062	may abdn.
Kelso, F. W., No. 1 Brea, Puente Hills, Los Angeles	13-	2-10	2,161	sd. sh. drlg.
Parry & Associates, No. 1 Pool, Long Beach, L. A.	29-	4-12	7,820	circulating
Texas Co., No. 15 Harlow Kent, Long Beach, L. A.	19-	4-12	4,590	sd. sh. drlg.
Two & One Oil, No. 3 Signal, Long Beach, L. A.	18-	4-12	5,610	deepening
South Basin Oil, No. 95 Signal, Long Beach, L. A.	29-	4-12	3,183	sd. sh. drlg.
Sepulveda Oil, No. 1 Grady, San Pedro, Los Angeles	23-	5-14	614	will deepen
Union Oil, No. 18 Y.L.G., Richfield, Los Angeles	34-	3-9	3,141	bailing
Traders Oil, No. 1 Wagner, Richfield, Los Angeles	22-	3-9	4,540	sd. sh. drlg.
Tide Water A. O., No. 54 Anaheim, E. Coyote, Orange	24-	3-10	3,660	redrlg. 3,630
Severns Drlg., No. 4 McNally, West Coyote, Orange	24-	3-11	6,665	sd. sh. drlg.
Southwest Expl., No. 16 State, Hunt. Beach, Orange	10-	6-11	4,580	reaming
Southwest Expl., No. 20 State, Hunt. Beach, Orange	10-	6-11	3,850	sd. sh. drlg.
Eyer & Peters, No. 1 Newland, Hunt. Beach, Orange	12-	6-11	3,750	will deepen
Duchess Oil, No. 4 Farnsworth, Hunt. Beach, Orange	34-	5-11	3,600	rigged up
Pac. Amer. Oil, No. 5 Orange, Hunt. Beach, Orange	34-	5-11	3,180	sd. sh. drlg.
Petremont Oil, No. 1 Norris, Hunt. Beach, Orane	36-	5-11	4,470	cmtd. 4,325
Hokum Oil, No. 1 Hokum, Carbon Canyon, San Ber.	31-	2-8	2,570	sd. sh. drlg.

OKLAHOMA

Week Ending July 15

NORTHERN OKLAHOMA

Atoka County

Giblett No. 1 Rich, SE SE SW Sec. 2-1-12. S.D. 728 ft.

Caddo County

Sinclair Prairie Oil Co. No. 1 Gorman, SW NW NW Sec. 1-16-13w. Drlg. 3,785 ft.

Cleveland County

Hall & Briscoe No. 1 Mantooth, NW NW NW Sec. 24-6-1e. Wdfrd. 3,500 ft.; drlg. 5,960 ft.

Nels Burton No. 1 Boggs, NE NE SE Sec. 16-9-2w. 2nd Wlx. 7,585 ft.; T.D. 7,646 ft.; P.B. 7,473 ft.; flwd. 100 B.O. in 11 hrs.; acd. and S. 10 B.F.P.H.

Nels-Burrton No. 1 Hirsch, NW NW NE Sec. 17-9-2w. O.W.P.B.; O.T.D. 7,692 ft.; T.D. 7,695 ft.

Comanche County

Mid Night Oil No. 1 Howe, NW NW NE Sec. 30-2-13w. O.W.D.D.; O.T.D. 703 ft.; T.D. 894 ft.; S.D.

Ellis County

Enterprise Drlg. Co. No. 1 Wahl, SE NW NW Sec. 1-18-25w. Sd. 660-65 ft.; T.D. 730 ft.; S.D.O.

Garfield County

Gulf Oil Corp. No. 1 Thomas, C W½ SW SW Sec. 21-24-4w. Drlg. 5,810 ft.

Keriyn Oil Co. No. 1 Hein, NW NW NW Sec. 36-22-4w. T.D. 5,042 ft.; S.D.O.

Grady County

J. B. Nichlos No. 1 Bushnell, NW NE SE Sec. 7-5-8w. Dry sd. 2,605 ft.; drlg. 3,500 ft.

Grant County

Carter Oil No. 1 Staggers, C W½ SE NW Sec. 4-25-3w. T.D. 5,528 ft.; H.F. W.; abd.

Smythe & O'Mara No. 1 State, C SE SW Sec. 16-25-4w. Sdy. dolo. 5,945 ft.; Wlx. 5,985 ft.; T.D. 6,215 ft.; Schlumberger showed S.W.; S.D.O.

Hughes County

Carter Oil No. 1 Hamilton, C W½ NE SW Sec. 33-4-9. T.D. 4,235 ft., S.D.

Continental Oil No. 1 Hudson, SE SE SE Sec. 8-4-9. Wdfrd. 5,525 ft.; Vla. 5,818 ft.; 1st Wlx. 6,312 ft.; T.D. 6,333 ft.; D.&A.

Harper County

Sinclair Prairie No. 1 George, SW SW SW Sec. 5-27-23w. Drlg. 6,842 ft., L.

Jackson County

English & Morgan No. 1 Lee, NW NW SE Sec. 36-2-19w. S.G. 1,360-63 ft.; T.D. 1,603 ft.; P.B. 1,243 ft.; S.D.O.

Jefferson County

H. M. Weir No. 1 Carmichael, NE NE SW Sec. 23-7s-7w. Drlg. 3,525 ft.

Kay County

Tide Water Asso. No. 1 Kelle, SE SE NE Sec. 27-28-1w. Wlx. 3,547 ft.; T.D. 3,705 ft.; D.&A.

Roy Starr No. 1 State, NE NE SW Sec. 13-29-2w. Miss 3,638 ft.; drlg. 3,776 ft.

Kingfisher County

Ace Gutowsky No. 1 Lankford, NE NE SE Sec. 34-17-6w. Miss. 7,014 ft.; Woodford 7,531 ft.; Manr. 7,562 ft.; Wlx. 8,105 ft.; 2nd Wlx. 8,275 ft.; T.D. 8,330 ft.; S.D.O.

Kiowa County

C. M. Beckett No. 1 Standerfer, NE NE NE Sec. 25-7-18w. T.D. 1,225 ft., sdy. sh.; abd.

Bollen-Dillard & Roberts No. 1 Holcomb, NE NE SW Sec. 25-7-19w. S.D. 300 ft.

C. J. Hagerling No. 1 Kimray, SW SW NW Sec. 36-5-18w. T.D. 1,000 ft.; S.D. csg.

Russell S. Tarr No. 1 Kelsay, SW SW NW Sec. 20-7-17w. Pay 1,050-51½ ft.; F. 70 B.O.P.H. by hds.; est. 1,500 to 2,000 B.O.P.D; S.I.

Lincoln County

Black Gold No. 1 Locquchment, NE NE NE Sec. 28-14-6. T.D. 3,175 ft.; est. 5 B.O.P.D.; S.D.

W. A. Villines No. 1 Marshall, NW NE NE Sec. 28-15-4. T.D. 5,080 ft.; S.D.

Logan County

Cooper Drlg. et al No. 1 Miller, NW NW SE Sec. 4-17-4w. Drlg. 2,675 ft.

Pawnee County

Ed Kelly No. 1 Hill, SW SW SE Sec. 1-21-5. T.D. 2,845 ft.; whipstock 2,840 ft.; drlg. by tools.

Payne County

C. R. Hoagland No. 1 Stanolind, SE SE SW Sec. 27-18-4. Drlg. 2,630 ft.

Pittsburgh County

Phillips Pet. Co. No. 1 Hubacker, C NW NE Sec. 11-7-15. 1st Wlx. 7,514-24 ft.; T.D. 7,731 ft.; D.&A.

Pottawatomie County

Alma Oil Co. No. 1 Johnson, SW NW SW Sec. 19-6-5. 2nd Wlx. 4,025 ft.; T. D. 4,062 ft.; P.B. 3,019 ft.; perf. 2,890-2,900 ft. in Earlsboro; F. 200 B.O.P.D.

F. W. Cooper No. 1 Strawn, SE SE SW Sec. 32-8-5. T.D. 4,411 ft.; S.D.

Sequoyah County

Thompson Bros. No. 1 Ruby, NW NW NE Sec. 30-12-22. Hntn. 1,451 ft.; drlg. 2,130 ft.

Seminole County

Culberson & Shepherd No. 1 Burton et al, SW NW SE Sec. 3-5-5. T.D. 2,668 ft.; F. 450 B.O. in 24 hrs.; comp.

Flynn et al No. 1 Work, NE SE SE Sec. 19-8-7. Wlx. 4,276-92 ft.; set pipe.

Stanolind O. & G. Co. No. 1 McMahan, NE NE SE Sec. 12-9-7. Cg. 3,507 ft.

Washita County

Continental Oil Co. No. 1 Proctor, C NW Sec. 28-10-20w. Drlg. 13,337 ft.

John Koberg No. 1-A Harms, C NW NE Sec. 6-10-16w. T.D. 6,000 ft.; tools moved out.

L. B. McWhirter No. 1 fee, NW SW SW Sec. 34-8-19w. T.D. 2,250 ft.; S.D.

SOUTHERN OKLAHOMA

Carter County

Pure Oil Co. No. 1 Noble, NE SE Sec. 35-3s-1e. T.D. 8,500 ft.; P.B. 6,530 ft.; tstd. wtr. at 6,319 ft.; set 7-in. 4,632 ft.; tstd. Hntn. 4,638-4,737 ft.; csg. perf. 11 times with 133 shots at 4,160-4,324½ ft.; swbd. 20 B.O.P.H. and 500,000 cu. ft. gas per day; F. 70 B.O. in 17 hrs.; R.U. to swb.

Choctaw County

Clyde Ross et al No. 1 Hardy, SE SE NW Sec. 21-7s-15. S.D. 1,569 ft.

Marshall County

Hughes et al No. 1 Vititto, C NE SE Sec. 11-5s-4e. O.W.D.D.; O.T.D. 7,100 ft.; T.D. 7,110 ft.; set plug 4,450 ft.; S. 51 B.F.P.R.

Tillman County

Oil Inv. No. 2 Hammell, NE NW NW Sec. 6-5s-15w. O.W.D.D.; O.T.D. 2,820 ft.; T.D. 3,353 ft.; S.D.

KANSAS

Week Ending July 15 (Descriptions are East unless marked otherwise)

Atchison County

Earl Wakefield et al No. 1 Natl. Life Ins., C NW NE Sec. 17-6-20. Drlg. 240 ft.

Barton County

Armer and Vernon O. & G. Co. No. 1 Hoffman, NW NW SW Sec. 18-16-11w. Tpka. 2,625 ft.; Lans. 3,045 ft.; T.D. 3,217 ft.; 200 ft. O.I.H. in 8 hrs.; acd. and pump 10 B.O.P.H.

B. B. & M. Drlg. Co. No. 1 Esfeld, NW NW SE Sec. 28-16-11w. Lans. 3,055 ft.; Arb. 3,337-45 ft., T.D.; H.F.W.; W.O.C.

Broswood Oil and Earl Wakefield No. 1 Rule, NW SW NE Sec. 2-16-13w. Lans. 3,103 ft.; Arb. 3,370 ft.; H.F.W. 3,384-88 ft., T.D.; D.&A.

J. A. Brouk et al No. 1 Pospishel, NE NE SE Sec. 20-17-15w. Tpka, 3,010 ft.; Arb. 3,548 ft.; T.D. 3,564 ft.; S. 3 B. O.P.H.

R. E. Day et al No. 1 Feltes, SE SE NE Sec. 14-16-12w. O.W.D.D. O.T.D. 1,875 ft.; T.D. 3,574 ft.; S. 13 B.O.P.H.

Butler County

Carey & Jennings No. 1 Kelly, C SW Sec. 20-27-4. S.D. 2,300 ft.

Elbar Corp. No. 1 Martin, NE SE SE Sec. 34-26-7. S.S.O. 2,600-05 ft.; T.D. 2,735 ft.; H.F.W.; D.&A.

G. S. Lucas and White Star Oil No. 1-A Lucas, NE NW NW Sec. 14-28-6. Drlg. 1,040 ft.

Comanche County

Kerr-Lynn et al No. 1 McMoran, C SE NW Sec. 25-34-16w. S.D. 3,695 ft.

Cowley County

Eason Oil Co. No. 1 Muret, SE SE NE Sec. 25-33-3. Drlg. 3,041 ft.

Hartman & Blair No. 1-A Brown, SE SE NW Sec. 33-30-4e. Arb. 3,284-86 ft., T.D.; P. 206 B.O. in 8 hrs.; pot. 612 B.O.; comp.

J. R. Lowell et al No. 1 Olsen, NE NE SE Sec. 13-35-7. M.I. mch.

E. J. Shaffer, Inc., No. 1 Starlin, NE NE SW Sec. 27-30-4. R.R.

Western Kans. O. & R. Co. No. 1 Gregory, SE SE NW Sec. 2-34-6. Rig.

Dickinson County

Franks et al No. 1 Huffman, NW NW SW Sec. 11-13-1. Hntn. 2,807 ft.; drlg. 2,925 ft.

Douglas County

Three Star Oil Co. No. 1 Griffith, C NW SE Sec. 4-14-8e. R.U. mch.

Ellis County

K. F. Nelson No. 1 Novak, NW NW NE Sec. 36-13-16w. Tpka. 2,821 ft.; S.O. 2,925 ft.; Lans. 3,085 ft.; T.D. 3,420 ft. in Arb.; D.&A.

Ellsworth County

I. W. Murfin No. 1 Louis, NW NW SE Sec. 28-16-10w. Tpka. 2,620 ft.; Lans. 2,970 ft.; gas 3,005-45 ft.; Arb. 3,282-3,301 ft., T.D.; O.I.H. 3,100 ft.

I. W. Murfin No. 1 Zajic, C S½ SW NE Sec. 31-16-10w. Spdg.

Geary County

Scheu & Tague No. 1 Aye, NW SW NW Sec. 10-12-8. Drlg. 1,965 ft.

Gray County

Champlin Ref. No. 1 Dirks, C NE SW Sec. 34-28-29w. Drlg. 5,902 ft.

Greenwood County

James Enright et al No. 1-A Schwab, SE SW SE Sec. 9-24-10. C.O. 1,390 ft.

G. L. Sheedy No. 1 fee, C E½ NE NW Sec. 13-25-12. Drlg. 1,350 ft.

Harvey County

Western Kans. O. & R. Co. et al No. 1 Mooreshead, SW SW SW Sec. 24-23-1w. Lans. 2,315 ft.; Miss. 2,973 ft.; T.D. 3,639 ft.; D.&A.

Kingman County

Skelly Oil Co. No. 1 Miller, CSL N½ NE Sec. 31-27-10w. Cellar.

Miami County

Dave Judd No. 1 Waite, CNL SW SE Sec. 4-15-25. S.D. 732 ft.

Kiowa County

Sinclair Prairie No. 1 Price, NW NW SW Sec. 22-28-20w. Miss. 4,910 ft.;

Arb. 5,538 ft.; T.D. 5,800 ft.; prep. to test.

Osage County

J. M. Edwards No. 1 Detrick (O.W.D.D.), C NW SE Sec. 21-14-15. O.T.D. 1,200 ft.; S.G. in sh. 1,618-24 ft.; S.D. 1,640 ft.

Pratt County

Skelly Oil Co. No. 1 Royse, C SW Sec. 9-28-11w. Drlg. 1,500 ft.

Reno County

Herndon Drlg. Co. No. 1 Compton, CEL SE NW Sec. 31-25-10w. Drlg. 3,770 ft.

Rice County

Bridgeport Mch. No. 1 Pierce, CSL N½ NE Sec. 29-20-7w. Miss. 3,305-07 ft., Arb. 3,703-43 ft., T.D.; D.&A.

Carey et al No. 1 Link, SW NW SE Sec. 19-19-9w. Lans. 2,923 ft.; S.S.O. 3,004 ft.; T.D. 3,291 ft.; P. 97 B.O. in 8 hrs.; pot. 291 B.O.; comp.

Fred Jones No. 1 Habiger, NE NE SW Sec. 9-18-10w. Lans. 2,948 ft.; congl. 3,245 ft.; H.F.W. 3,295 ft., T.D.; D.&A.

Frank Hollow et al No. 1 Guldner, SE SE SE Sec. 5-18-9w. Drlg. 2,400 ft.

Phoenix Drlg. No. 1 Linville, SW SW SE Sec. 4-20-10w. Drlg. 2,135 ft.

E. J. Shaffer No. 1 Bauer, C W½ SW SW Sec. 23-21-7w. T.D. 3,400 ft.; 3,000 ft. O.I.H.; no test.

Skelly Oil Co. No. 1 Bernstorf, CSL SE SE Sec. 22-19-10w. Arb. 3,282-87 ft., T.D.; R.U.S.T.

C. H. Weaver No. 1 James, NE NW SW Sec. 25-19-10w. Drlg. 2,750 ft.

Rooks County

Broadview Oil No. 1 Baxter, NE SW SW Sec. 35-8-16w. Drlg. 2,435 ft.

Russell County

Braden & McClure No. 1 Blehm, SW SW NW Sec. 11-14-14w. S.O. 2,530-35 ft.; S.G. 2,670-80 ft.; drlg. 3,165 ft.

Central Pet. No. 1 Crisman, SW NW NE Sec. 20-14-14w. Drlg. 1,675 ft.

Phillips Pet. No. 1 Maier, SW SW NE Sec. 15-15-14w. Lans. 3,002 ft.; Arb. 3,249-57 ft., T.D.; 2,800 ft. O.I.H.; P.B. 3,253 ft.

Shell Oil Co. No. 1 Berrick, NW NW SE Sec. 13-15-13w. Cg. 3,349 ft.

A. H. Witt No. 1 Speere, SW SW NE Sec. 7-14-14w. Drlg. 2,300 ft.

Sherman County

Goodland Ind. Gas Co. No. 1 Wilcoxson, SE NW Sec. 27-8s-39w. T.D. 1,100 ft.; est. 25,000 cu. ft. gas.

Stafford County

Stanolind O. & G. No. 2 Sittner, NE SW SW Sec. 3-22-12w. Arb. 3,630-35 ft., T.D.; P. 133 B.O. in 8 hrs.; pot. 399 B.O.; comp.

Virginia Drlg. No. 1 Tieperman, NE NE SW Sec. 29-21-12w. Drlg. 3,530 ft.

Woodson County

Roby et al No. 1 Meairs, SW SW NW Sec. 21-25-14. Bvlle. 1,367-70 ft.; S.O.; S.D.

ARKANSAS

Bradley County

Amerada Pet. Corp. No. 1 Bradley Lbr. Co., 660 ft. N, 460 ft. E. SW cor. SE NE Sec. 14-17-10. Drlg. 2,000 ft.

Columbia County

Ark. Fuel Oil Co. No. 1 Glasgow-Crisp, 603 ft. N, 605 ft. W, SE cor. NE SW Sec. 23-17-20. W.O.C. 7,620 ft.

Arkansas Fuel Oil Co. No. 1-C D. Glasgow, C NW SW Sec. 23-17-20. Drlg. 4,700 ft.

Atlantic Ref. Co. No. 1 J. A. Foster, C NW NE Sec. 24-17-20. T.D. 4,026 ft.; P.B. 3,195 ft.; W.O.C. 7,602 ft.

Atlantic Ref. Co. No. 1 Pine Woods Lbr. Co., C NE NE Sec. 16-18-22. Set 9⅝-in. csg. 4,102 ft.; T.D. 6,960 ft.

Atlantic Ref. Co. No. 1 L. Spain, C SW SW Sec. 18-17-19. Drlg. 5,735 ft.

Lion Oil Ref. Co. No. 1 Tissue, C SW NW Sec. 15-18-19. T.D. 7,090 ft; drlg. 7,819 ft.

Mid-Continent Pet. Corp. No. 1 Foster, C NE NW Sec. 24-17-20. Attempt squeeze 5,241 ft.

Oliphant Oil Co. No. 1 J. Jones, C SE SE Sec. 16-17-20. Set 13⅜-in. csg. 120 ft.; drlg. 5,242 ft.

Phillips Pet. Co. No. 1 J. A. Joiner, C SE NE Sec. 22-17-20. Prep. test 7,780 ft.

Phillips Pet. No. 2 Longino, Sec. 15-17s-20w. Loc.

Placid Oil Co. No. 1 R. A. Couch, C NW NW Sec. 19-17-19. T.D. 7,525 ft.; 7-in. 7,575 ft.; drlg. plug.

Placid Oil No. 2 Couch, Sec. 19-17s-19w. Drlg. 190 ft.

Southwood Oil Co. No. 2 Foster, C SE NE Sec. 24-17-20. Drlg. 5,277 ft.

Southwood Oil Co. No. 1 D. Glasgow et al, C NE NE Sec. 22-17-20. Drlg. 5,441 ft.

Southwood Oil No. 1 H. F. Simmons, Sec. 22-17s-20w. Loc.

Southwood No. 2 H. F. Simmons, Sec. 22-17s-20w. Loc.

Southwood No. 2 R. E. Walthall, Sec. 22-17s-20w. Loc.

Standard Oil No. 1 J. A. Foster, Sec. 19-17s-19w. Drlg.

Standard Oil Co. of La. No. 1-B Lewis Unit, 660 ft. SW cor. NE NE Sec. 15-17-19. T.D. 2,469 ft.; set 9⅝-in. csg. 2,450 ft.; drlg. 6,488 ft.

Twin City Syndicate No. 1 J. H. Hollensworth, 1,320 ft. E, 660 ft. S NW cor. SW¼ Sec. 31-17-18. Set 13⅜-in. csg. 148 ft.; drlg. 3,850 ft.

G. H. Vaughn No. 2 J. Jones, C SE NE Sec. 21-17-20. Drlg. 6,102 ft.

G. H. Vaughn No. 1 L. Paschal, C SE NW Sec. 22-17-20. Drlg. 6,837 ft. (no report).

Craighead County

Tanmark, Inc., No. 1 R. M. Martin, Sec. 35-14-3e. Drlg. 2,619 ft. (no report).

Lafayette County

East Texas Ref. Co. et al No. 1-B Patten, C S½ NE NE Sec. 24-16-24. Set 10¾-in.; comp., 81 B.O.P.D.

East Texas Ref. Co. et al No. 1 Warren Est., C N½ NE NW Sec. 24-16-24. Set 10¾-in. csg. 1,210 ft.; cd. 3,320-40 ft., 5 ft. ool. L., S.O., rest bl. sh. and limy sh.; drlg. 3,687 ft. (no report).

E. Tex. Ref. Co. No. 1-B C. Warren, Sec. 24-16s-24w. Drlg. 2,297 ft.

Standard Oil Co. of La. No. 6 McKean, 660 ft. NE cor., SE SW Sec. 7-16s-22w. T. Smackover L. 7,201 ft.; T. soft L. 7,205 ft.; stuck D.S.; fsg. (no report).

J. C. Stephens No. 1 J. A. Allen, C N¼ NW NW Sec. 30-16-23. Set 10¾-in. csg. 112 ft.; W.O. 115 ft. (no report).

Little River County

C. & M. Drlg. Co. No. 1 Strawn, SW cor. SE Sec. 20-10-32. Cd. 1,270-80 ft.; sh.& wtr. sd.; reported S.O. 1,365-70 ft.; 1,542-64 ft. sd. and 1,564-74 ft. sdy. L.; cor. T.D. 1,598 ft.; set 7-in. csg. 1,590 ft. (cor.); S.D.W.O. 4,591 ft.

Lonoke County

Cabot Drlg. Club, Inc., No. 1 Benson townsite, Sec. 18-4n-9w. Reported S.O. 1,400-50 ft.; hole clean; ran survey to 2,573 ft.; P.B. 1,470 ft.; set 4½-in. csg. 1,390 ft.; S.D.W.O. 2,760 ft.

W. L. Tedford No. 1 Anderson, Sec. 7-4n-9w. Loc.

Miller County

Vacarro & Waterman No. 1 Westbrook, C SW SW Sec. 1-20-28. T. por. L. 6,-165 ft.; set 5½-in. csg. 6,164 ft.; acidized with 3,500 gal.; swbd. 2 B.P.H. until swbd. dry; flwd. 60 B.O.P.D.; T.D. 6,199 ft.

Ouachita County

J. E. Crosbie, Inc., No. 2 F. A. Laney, Sec. 36-15-16. Stk. 5½-in. csg. 2,777 ft.; set 966 ft. at 2,777 ft.; W.O.C.; T.D. 2,-832 ft.; perf. 2,678-82 ft.; tstd. est. 2,-000 ft. S.W.; P.B. 2,550 ft.; drld. out to 2,626 ft.; reperf. csg. 2,570-82 ft.; S.W.; reperf. csg. 2,586-96 ft.; pmpd. S.W.; P.B. 2,420 ft.; perf. 2,282-88 ft.; pmpg. 150 B.P.D. fluid, incl. 5 bbl. oil; arng. recement; T.D. 2,832 ft.

Phillips Pet. Co. No. 1 J. D. Reynolds, 330 ft. SE cor. SE NW Sec. 27-15-15. O.W.W.O.; O.T.D. 4,926 ft.; comp. as disc. well, Snow Hill field; perf. csg. 2,732-35½ ft., 2,728-31½ ft., 2,744-47½ ft., and 2,756-60 ft.; est. 2,300 ft. F.I. H., 1% oil; P.B. 2,770 ft.; set cmt. retainer 2,719 ft.; sqzd.; S.D.; W.O. 2,-746 ft. (no report).

Pike County

Bruce E. Wallace No. 2-A Glenn Tilyeu, 320 ft. N, 330 ft. W SE cor. Sec. 26-8s-24w. Set 6-in. csg. 385 ft.; reported S.O. 400 ft. (no report).

Union County—Schuler

E. M. Jones No. 1-C Murphy Ld. Co., Sec. 24-18-18. Cd. Jones sd. 7,560 ft.; T.D. 7,640 ft.; set 7-in. csg. 7,620 ft.; perf. 7,560-85 ft.; swbd. S.W.; recmtd. csg. 7,544 ft.; perf. 7,562-83 ft.; prep. tst. 7,783 ft.

Lion Oil Ref. Co. No. 1 S. Bessie, C S½ Lot 5, NW Sec. 7-18-7. 10¾-in. csg. 1,-935 ft.; drlg. 6,600 ft.

Lion Oil Ref. Co. No. 2 Clay, 330 ft. N, 660 ft. W, SE cor. NE SW Sec. 12-18-18. T. Jones sd. 7,629 ft.; 7-in. csg.; T.D. 7,713 ft.

Lion Oil Ref. Co. No. 1 S. Frank, C S½ SW NE Sec. 12-18-18. Comp., 37 B.O. P.D.

Lion Oil Ref. Co. No. 1 S. John, SE cor. SE NE Sec. 12-18-18. T. Jones sd. 7,577 ft.; 7-in. csg. 7,650 ft.; T.D. 7,675 ft. (no report).

Phillips Pet. Co. No. 1 Mill, NW cor. S½ Lot 4, SW Sec. 18-18-17. T. Jones sd. 7,547 ft.; 7-in. csg. 7,687 ft.; T.D. 7,700 ft.

Union County—Other

S. S. Alexander No. 1 J. P. Pickering, C NW NW SW Sec. 31-16-15. Cd. 2,151-52 ft.; soft por. sat. sd., salty taste; D.S.T. S.S.W.; cd. 2,152-56 ft.; rec. 2 ft. por. S.W. sd.; cd. 2,490-2,510 ft., gr. shaly sd. and hd. gr. sd.; W.O. 2,670 ft.

Bob Milam No. 1 Primm Est., SE cor. Lot 5, NE Sec. 1-16-16. W.O.C. 2,579 ft.

Sam Sebersky No. 3 J. N. Jerry, Sec. 21-17-14. Cd. 2,701-13 ft.; set 5½-in. csg. 2,718 ft.; drlg. wtr. sd. 2,516 ft.; P.B. 2,665 ft.; perf. 2,706-09 ft.; swbd. S.W.; S.D.W.O. 2,718 ft.

NORTH MISSISSIPPI

Clarke County

Jeremiah L. Ryan et al No. 1 M. Eddins, 500 ft. SE cor. Sec. 29-2n-14e. S.D. 1,502 ft.

Humphreys County

Union Prod. Co. No. 1 C. B. Box, Sec. 15-14n-4w. Drlg. 4,412 ft.

Lafayette County

Adams O. & G. Co. No. 1 Lewellen, Sec. 9-10s-1w. Drlg. sh. 1,620 ft.

Prentiss County

Home Dev. Co. No. 1 Allen, Sec. 8-7s-9e. Drlg. L. 875 ft.; no report.

Simpson County

Cleve Love No. 1 N. E. Garner, SW cor. SW NE Sec. 1-10n-17w. S.D. 3,145 ft.

LOUISIANA

N. LOUISIANA WILDCATS

Bienville Parish

Ark. La. Gas Co. No. 2 Gayoso, 660 ft. SW cor. SE Sec. 14-16-10. T. Tr. Pk. 5,432 ft.; D.S.T. 5,796-5,805 ft. tstd. dry in 26 min.; set 8⅝-in. csg. 6,300 ft.; T.D. 8,319 ft.; set csg.; per. 8,285-8,314 ft.; flwd. est. 2,000,000 cu. ft. gas and sprayed S.W.; acdzd. with 6,000 gal. and tstd. est. 4,000,000 cu. ft. gas and spray S.W.; perf. 8,110-70 ft. and 8,-306-12 ft.; flwd. 39 bbl. dist., 16 bbl. S.W. and 1,500,000 cu. ft. gas on ¼-in. ck.; acdzd. with 2,000 gal. and tstd. same; R.P. 2,818 lb.; drlg. sh.&L. 8,-407 ft.; D.S.T. 8,310-8,404 ft.; tstd. 750 ft. mud cut with gas in 1 hr. 47 min.; drlg. 8,522 ft.

Ark. La. Gas Co. No. 1 Long Bell Mineral Co., NW cor. NW¼ Sec. 14-16n-10w. W.O.C. 1,240 ft.

Hunt Oil Co. No. 1 Hodge-Hunt Lbr. Co., 300 ft. E of C Sec. 36-17n-6w. Loc.

Bossier Parish

H. M. Harrell et al No. 1 Thompson Unit, 70 ft. NW, C SE Sec. 20-17-11. Drlg. 5,167 ft.

Caddo Parish

J. G. Bailey No. 2 Muslow, 672 ft. S, 396 ft. W. NE cor. SE NW Sec. 17-20-15. O.W.D.D.; O.T.D. 2,198 ft.; W.O.S. R. 2,196 ft.

Frank G. Bandein No. 1 Caddo Levee Bd., 150 ft. S. 350 ft. W. NE cor. NW SE Sec. 26-21-16. W.O.C. 943 ft.

Burton & Harlan No. 1-A Perche, 500 ft. S, 747 ft. E, C Sec. 1-20-16. Set 10-in. 60 ft.; comp., 50 B.O.P.D.

East Texas Ref. Co. No. 1 Alkins, SW SE Sec. 5-23n-13w. Drlg. 5,397 ft.

East Texas Ref. Co. No. 2 Alkins, Sec. 4-23n-15w. Drlg. 5,591 ft.

W. C. Feazel and Eagle Prod. Corp. No. 1 Caddo Mercantile Co., 2,310 ft. W, 955 ft. S, NE cor. Sec. 5-23-15. Drlg. 4,621 ft.

M. M. Ferrell No. 1 Satterwhite, SE NW Sec. 10-20-16. Set 6-in. csg. 1,335 ft.; tstd. S.W.; S.O. 1,580 ft.; acdzd. with 3,000 gal.; tstd. S.W.; S.O.; S.D. 2,010 ft.; rng. 4½-in. csg. 2,263 ft.; abd. 2,-263 ft.

H. Fotiades No. 1 Bath, S of NW cor. Sec. 3-17n-15w. Drlg. 1,595 ft.

Harry Fotiades No. 1 Furman, 393 ft. S, 870 ft. E NW cor. NE Sec. 35-18-14. Set surf. csg. 297 ft.; drlg. 3,649 ft.

H. Fotiades No. 1 Sokoloski, S of NE Sec. 35-18n-14w. Drlg. 290 ft.

Hamilton & Stone No. 1 Atlanta, 500 ft. S, 244 ft. W, NE cor. NW Sec. 2-20-16. Set 6-in. csg. 1,701 ft.; T.D. 1,701 ft.; acdz.

A. R. Hancock No. 2 Standard Oil Co., Sec. 18-21n-15w. T.D. 1,044 ft.

A. R. Hancock No. 4 Standard Oil Co., Sec. 18-21n-15w. Loc.

J. M. Harper No. 1 Walker, 453 ft. E, 510 ft. S NW cor. Sec. 28-18-14. Drlg. 2,010 ft.

Hurricane Pet. Co. No. 2 De Soto Corp., W of NE cor. Sec. 26-18n-14w. Drlg. 1,400 ft.

L. & A. Oil Co. No. 3 Burton, 1,163 ft. E, 979 ft. S, NW cor. Sec. 7-20-15. Drlg. 820 ft.

Linham & Jones No. 3 fee, E of NW cor. Sec. 21-20n-15w. W.O.C. 2,185 ft.

C. H. Lyons et al No. 1 Agurs, 760 ft. N, 710 ft. W, SE cor. Sec. 34-18-14. Set 9⅝-in. csg. 1,302 ft.; comp., 20 B.O.P.D.

W. W. McDonald No. 1 Burton, 300 ft. S, 550 ft. E, NW cor. NW NW Sec. 7-20-5. Comp., 50 B.O.P.D.

W. M. McDonnell No. 2 Burton, 7-20n-15w. Loc.

J. Ober & Sons No. 2 fee, 920 ft. N, 200 ft. W, C Sec. 36-2-16. W.O.S.R. 2,275 ft.

Oblinger & Ritter No. 3 Boisseau, 1,220 ft. N, 1,310 ft. E, SW cor. SE Sec. 34-21-16. S.D. 820 ft.

Red Iron Drlg. Co. No. 1 Agurs, 1,900 ft. S, 715 ft. E, NW cor. Sec. 25-18-14. 9⅝-in. csg. 1,462 ft.; drlg. 4,780 ft.

John Schmidt No. 2 Sproull, 970 ft. N, 570 ft. W, SE cor. Sec. 32-20-16. Tstd. S.W. 1,654 ft.

Seymour Oil Co. No. 1 Hughes et al, 330 ft. NE cor. NW Sec. 15-20-15. Drlg. 1,900 ft. (no report).

Simplex Oil Co. No. 12 Youree, C SW SE Sec. 13-20-15. W.O.C. 2,268 ft.

Stanolind O. & G. Co. No. 1, 131 Dillon Hrs., C SE NE Sec. 14-21-15. Set 16-in. csg. 494 ft.; 10¾-in. csg. 4,520 ft.; cd. oil sd. 3,912-20 ft.; 3,922-26 ft., and 3,941-45 ft.; D.S.T. 3,900-47 ft.; tstd. 170 ft. mud; S.O. 400 ft. S.W. 7 min.; ¾-in. ck.; drlg. 5,342 ft.

Joe Strahan No. 2 Stiles, 3,658 ft. N, 1,050 ft. E. SW cor. Sec. 29-21-16. W.O.C. 2,404 ft.

Joe G. Strahan No. 2-A Stiles, 4,165 ft. N. 473 ft E. SW cor. Sec. 29-21-16. W.O.C. 2,400 ft.

Texas Co. No. 53 C. M. L. Co., Sec. 23-21-15. Set 6⅝-in. csg. 1,485 ft.; W.O. S.R. 1,635 ft.

Caldwell Parish

Critchett & Woods (formerly E. T. Oakes) No. 1 Kyles, NE cor. SW NE Sec. 18-11-3e. S.D.O. 3,003 ft.

Catahoula Parish

Ross Morel et al No. 1 Ballard Est., 330 ft SE cor. SE SW Sec. 8-9n-7e. Drlg. 2,312 ft.

De Soto Parish

Daniel Murray No. 1 Russell, 50 ft. N, 500 ft. W. SE cor NE NW Sec. 12-11-16, O.W.D.D.; O.T.D. 2,046 ft., drlg. 2,325 ft.

Roosth & Genecov Prod. Co. No. 1

Woolums, 990 ft. S, 330 ft. E NW cor. SW¼ Sec. 29-12-12. Drlg. 1,740 ft.
C. H. Tuttle No. 2-A Wemple, E NW cor. SW¼ Sec. 14-12n-11w. R.U.

Grant Parish

R. L. Arnold No. 1 Swope, Sec. 16-9n-1e. W.O.C. 80 ft.
Longwood O. & G. Co. No. 1 K. B. Thompson, Sec. 5-5n-3w. Loc.

La Salle Parish

G. C. Walsenham No. 4 Dean, 300 ft. W No. 3, Sec. 23-9n-1e. Set 6⅝-in. csg. 1,627 ft.; T. sd. 1,628 ft.; comp.; 50 B.O.P.D.

Sabine Parish

Ed Bailey No. 1 Hale, 330 ft. NW cor. NE NW Sec. 6-7-12. W.O.C. 60 ft.
Geo. Ellis No. 1 Walker, 500 ft. NW cor. NW SE Sec. 8-4-12. Set 12½-in. csg. 276 ft.; reported S.O. 2,180 ft. and 2,263-65 ft.; rng. csg. 2,269 ft.; cd. sdy. sh. 2,265-69 ft.; set 7-in. csg. 2,250 ft.; drlg. 2,838 ft.
M.C.M. Drlg. No. 1 Sipulvado, Sec. 4-7n-13w. Loc.
Okla.-Tex. Tr. No. 2 Frost Lbr. Ind., 330 ft. SE cor. NE SW Sec. 22-9-13. Set 12½-in. csg. 84 ft.; 8-in. csg. 1,568 ft. T;. clk. rk. 1,568 ft.; W.O.C. 1,699 ft.
K. R. Phillips No. 1 Craig, 335 ft. S, 330 ft. E NW cor., SE Sec. 22-9-13. Drlg. 1,500 ft.
Potter et al No. 2 Ebarb, NW cor. NE SE Sec. 4-7n-13w. Drlg. 2,030 ft.
W. M. Quick No. 1 Sabine, SE cor. NE NE Sec. 8-7-13. Tstd. S.O. 2,397 ft.; S.D. 3,447 ft.
H. M. Sneed No. 1 Leone, SW cor. NW SE Sec. 8-7-13. T.D. 1,962 ft.; drlg. 2,061 ft.
Spier & Chestnut No. 1 De Soto Corp., NW cor. SE NE Sec. 27-10n-13w. Drlg. 1,200 ft.
Sutton-Zwolle Oil No. 4 Bowman-Hicks Lbr., NW cor. NW SE Sec. 24-7n-14w. Loc.
A. Tillman No. 1 Ritter, 400 ft. NE cor. SE SW Sec. 26-8-12. Drlg. 2,350 ft.
J. A. Williams No. 1 Long Bell Lbr. Co., 250 ft. S, 550 ft. W, C Sec. 33-8-14. Drlg. 2,247 ft.

Tensas Parish

Continental Oil Co. No. 1 Cammack, 1,690 ft. S, 330 ft. W, NE cor. Sec. 31-13-12e. Set 10¾-in. csg. 1,623 ft.; T. salt 4,124 ft.; cg. salt 4,135 ft.

Webster Parish

Geo. Barham No. 1 A. J. Hodges, 1,916 ft. N, 728 ft. E, SW cor. Sec. 23-21-10. O.T.D. 4,574 ft.; jnkd. hole; skdd. 75 ft. N and spdd. new hole; 9⅝-in. csg. 1,275 ft.; drlg. 5,465 ft.
Hunt Oil Co. No. 1 Coffee, C SW NW Sec. 19-21-9. Setting csg. 5,500 ft.
Hunt Oil Co. No. 30 Hope, 100 ft. W, C NE SW Sec. 30-21-10. T.D. 8,214 ft.
Hunt Oil Co. and Magnolia Pet. Co. No. 1 Gray-Cox, SW cor. Sec. 19-21-9. Comp., 286 bbl. dist. day.
Hunt Oil Co. No. 1 Stewart, NW SE Sec. 32-21-10. Set 9⅝-in. 5,672 ft.; T. Cotton Valley 8,074 ft.; T. "D" sd. 8,450 ft.; light O.S.; T. Bod. 8,547 ft. (cuttings); comp., 352 bbl. dist. day.
Hunt Oil No. 2 E. L. Steward, Sec. 32-21n-10w. Drk.
Magnolia Pet. Co. No. 1 Roseberry Unit, 20 ft. N and W, C SE Sec. 29-23-9. T.D. 8,005 ft.
Ohio Oil Co. No. 6 Bodcaw, Acct. 4, 660 ft. NE cor. NW Sec. 13-21-10. Holloway sd. 5,773-79 ft.; 9⅝-in. csg. 5,767 ft.; T.D. 5,855 ft.; flwd. 4 B.O.P.H. 5,773 ft.
Oliphant Oil Corp. No. 2-A Hodges, 660 ft. W, 460 ft. S, NE cor. Sec. 3-20-10. Drlg. 6,159 ft.
O. F. Shaver No. 1 Stewart, 150 ft. S, 563 ft. E, NW cor. SW NE Sec. 4-18-10. Drlg. 2,245 ft.
Stanolind O. & G. Co. No. 2 Pardee, Sec. 25-21-10. Drlg. 5,871 ft.
Union Prod. Co. No. 1 Walker Unit, 50 ft. S, C SE Sec. 30-18-8. Set 9⅝-in. csg. 6,490 ft.; T. Pettit 6,665 ft.; T. Tr. Pk. 6,910 ft.; T.D. 10,383 ft.; tstg. S.S. G.; P.B. depth 5,775 ft.; D.&A. 10,383 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Alfred Boudoin, Sec. 58-12s-3e. T.D. 8,223 ft.; abd.
Continental Oil Co. No. 1 David Meaux, Sec. 9-12s-3e. Drlg. sdy. sh. 6,775 ft.
Continental Oil Co. No. 1 Franciol, Sec. 67-12s-3e. Drk.
Continental Oil Co. No. 1 Lucion Duhon, Sec. 17-12s-3e. T.D. 10,762 ft.; 7-in. csg. 10,316 ft.; P.B. 10,201 ft.; cd. sd., S.O. &G. 10,112-70 ft.; perf. csg. 10,140-55 ft.; rec. mud and gas; perf. csg. 10,159-60 ft.; set cmt. retainers; W.O.C.; perf. csg. 10,159-65 ft.; I.P. 4 B.P.H.; ¼-in. ck.; killed; perf. csg. 10,505-26 ft.; I.P. 139 bbl. dist. P.D.; 5/32-in. ck.

Bancroft—Beauregard Parish

Republic Prod. Co. No. 7 Lutcher Moore, Sec. 14-6s-13w. T.D. 8,000 ft.; 5½-in. csg. 7,963 ft.; oil sd. 7,901-08 ft.; perf. csg. 7,898-7,900 ft.; tstd. S.W.; perf. csg. 7,896-98 ft.; tstd. oil and S.W.; perf. csg. 7,639-41 ft.; run tbg.
Republic Prod. Co. No. 8 Lutcher Moore Lbr. Co., Sec. 14-6s-13w. T.D. 7,328 ft.; 5½-in. csg. 7,315 ft.
Republic Prod. Co. No. 1 Nettie Smith Sec. 15-6s-13w. Loc.

Bateman Lake—St. Mary Parish

Texas Co. No. 2 State-Bateman Lake, Sec. 21-16s-12e. 13⅜-in. csg. 1,700 ft.; T.D. 9,453 ft.; sdtrkd. 6,880 ft.; drld. into old hole; P.B. 6,560 ft.; sdtrkd.; T.D. 9,156 ft.; P.B.; sdtrkd.; drlg. sh. 10,223 ft.

Baton Rouge—East Baton Rouge Parish

Geo. Echols No. 1 J. Gebelin, Sec. 66-7s-1w. Drlg. sh. 6,410 ft.
M. T. Grubb et al No. 1 College Town Com., Sec. 67-7s-1w. Drlg. 50 ft.
Wm. Helis No. 3 A.L.S. 4, Sec. 67-7s-1w. Drk.
Wm. Helis No. 3-D Duplantier, Sec. 66-7s-1w. Top sd. 6,455 ft.; cg. sd. 6,466 ft.
Wm. Helis No. 1 Farris-Middleton, Sec. 66-7s-1w. Drlg. sh. 2,040 ft.
Wm. Helis No. 3 Nelson, Sec. 36-7s-1w. Drlg. 100 ft.
Lisbon-Iberia Oil Co. No. 3 Duplantier, Sec. 66-7s-1w. T.D. 6,367 ft.; fsg.
T. G. Markley-Crosby Drlg. Co. No. 2 Knox et al, Sec. 66-7s-1w. Drlg. sh. 6,168 ft.
Texas Canadian Oil Co. No. 1 C. J. Bogan, Sec. 68-7s-1w. Drlg. sh. 5,120 ft.

Bay St. Elaine—Terrebonne Parish

Texas Co. No. 3-B State-Bay, Sec. 13-22s-17e. T.D. 10,513 ft.; tried to blow out; P.B. 6,904 ft.; set retainer 6,392 ft.; prep. to perf.
Texas Co. No. 19 State-Bay St. Elaine, Sec. 18-22s-18e. Loc.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 11 Wilberts, Sec. 67-9s-11e. Loc.

Bayou des Allemands—St. Charles Parish

Amerada Pet. Corp. No. 4 St. Charles Ld. Co., Sec. 13-15s-2e. Loc.

De Large—Terrebonne Parish

Fohs Oil Co. No. 1 Buckley-Mahler, Sec. 25-19s-16e. 13⅜-in. csg. 3,380 ft.; 9⅝-in. csg. 10,058 ft.; drlg. sh. 12,667 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 29 State, Sec. 17-23s-20e. Rig.
Texas Co. No. 56 State, Sec. 20-23s-20e. Drlg. sd.&sh. 4,382 ft.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 26 Sch. Ld., Sec. 16-14s-13w. T.D. 2,465 ft.; 13⅜-in. csg. 2,465 ft.; T.D. 6,564 ft.; P.B.; sdtrkd.; T. salt 8,059 ft.; T.D. 8,065 ft.; P.B. to 2,845 ft.; sdtrkd.; T.D. 7,172 ft.; fsg.; set whpstk. 7,082 ft.; stk. D.S.; P.B.; sdtrkd.; drlg. sd. 3,402 ft.
Magnolia Pet. Co. No. 25 Cameron Meadows, Sec. 21-14s-13e. Drk.

Chacahoula—La Fourche Parish

Sun Oil Co. No. 1 Cypress, Sec. 75-15s-15e. Bldg. drk.
Sun Oil Co. No. 4 Delbert Stark and Brown Cypress Co., Sec. 70-15s-15e. T.D. 7,794 ft.; P.B. 6,764 ft.; sdtrkd.; T.D. 8,268 ft.; stk. D.S.; shot at 8,195 ft.; P.B. 7,642 ft.; sdtrkd. 7,642 ft.; T. D. 8,260 ft.; 9⅝-in. csg. 8,260 ft.; T.D. 8,292 ft.; cleaned hole; found csg. collapsed; recmtd. csg.; rmg. 7,176 ft.; found leak in csg.; recmtd.; P.B. 7,969 ft.; sdtrkd. 8,249 ft.; P.B. 2,200 ft.; sdtrkd.; drlg. sh. 6,393 ft.
Sun Oil Co. No. 2 Dodge Sunberry, Sec. 65-15s-15e. Driving piling.

Chalkley Field—Cameron Parish

Shell Oil Co., Inc., No. 2 Hanzen, Sec. 21-12s-6w. T.D. 9,074 ft.; sd. showing gas.

Charenton—St. Mary Parish

Fifteen Oil Co. No. 1 T. Brulation, Sec. 19-13s-10e. 7-in. csg. 8,509 ft.; drlg. sh. 10,550 ft.
Fifteen Oil Co. No. 2 State, Sec. 31-13s-10e. R.U.
Pan American Prod. Co. No. 1 Achee, Sec. 21-13s-9e. Loc.
Pan American Prod. Co. No. 14 Laws Realty Co., Sec. 30-13s-10e. T.D. 7,405 ft.; P.B. 6,950 ft.; sdtrkd.; T.D. 8,009 ft.; P.B. 7,170 ft.; perf. csg. 7,154-65 ft.; tstg.
Pan American Prod. Co. No. 7 Robichaux, Sec. 11-13s-9e. T.D. 1,051 ft.; 7-in. 1,035 ft.; R.U. to pmp.
Pan American Prod. Co. No. 5 South Coast, Sec. 30-13s-10e. T.D. 8,805 ft.; perf. csg. 7,150-66 ft.; tstd. oil and S.W.; perf. csg. 7,162-70 ft.; I.P. 318 B.P.D.; 11/64-in. ck.
Pan American Prod. Co. No. 16 Veeder, Sec. 11-13s-9e. T.D. 3,009 ft.; P.B. 850 ft.; sdtrkd.; T.D. 1,291 ft.; 7-in. csg. 1,283 ft.; I.P. 250 bbl. fluid; 50 per cent S.W.

Cheneyville—Rapides Parish

Gulf Oil Corp. No. 1 Bickerstaff, Sec. 4-18s-2e. Loc.
Gulf Oil Corp. No. 1 M. B. Pope, Sec. 4-1s-2e. Drlg. sh. 7,836 ft.
Gulf Oil Corp. No. 1 C. U. Pope, Sec. 4-18-2e. Loc.
Texas Canadian Oil Co. No. 2 Pope, Sec. 56-1s-2e. T.D. 5,845 ft.; P.B. 1,650 ft.; sdtrkd. 1,810 ft.; drlg. sh. 5,012 ft.

Choctaw—Iberville Parish

Standard of La. No. 1 Wilbert, Sec. 53-9s-11e. Loc.

Convent—St. James Parish

Continental Oil Co. No. 2 Colonial Sugars, Inc., Sec. 50-12s-4e. 18⅝-in. csg. 220 ft.; drlg. sh. 6,330 ft.
Continental Oil Co. No. 2 Realty Operators, Inc., Sec 16. 13⅜-in. csg. 1,492 ft.; T.D. 7,889 ft.; P.B. 7,275 ft.; sdtrkd. 7,305 ft.; T.D. 8,235 ft.; well blew out; caught fire; cleaned hole to 4,866 ft.; P.B. 2,502 ft.; sdtrkd.; T.D. 7,967 ft.; 9⅝-in. csg. 7,950 ft.; T.D. 8,785 ft.; perf. 8,035-45 ft.; flowed 204 bbl. dist. P.D.; 12/64-in. ck.

Creole—Cameron Parish

Superior Oil Co. No. 7 State, Gulf of Mexico. T.D. 6,090 ft.; run. elec. sur.

Darrow—Ascension Parish

Humble O. & R. Co. No. 22 Community, Sec. 32-10s-2e. Drlg. sh. 5,119 ft.
Kiva Oil Co. No. 1 Duplessis, Sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 5 Dog Lake, Sec. 5-22s-16e. T.D. 7,533 ft.; perf. csg. 6,770-6,805 ft.; tstg.
Texas Co. No. 23 State, Sec. 5-22s-16e. Drlg. sdy. sh. 4,423 ft.

Edgerly Field—Calcasieu Parish

J. G. Sutton Oil Co. No. 1 Reed, Sec. 29-9s-11w. S.W. sd. 5,281 ft.

Eola—Avoyelles Parish

Amerada Pet. Corp. No. 1 Avoyelles Bnk. & Tr. Co., Sec. 5-2s-3e. Top Wilcox 8,522 ft.; cg. 8,531 ft.
Amerada Pet. Corp. No. 1 Haas Inv. Co., Sec. 10-2s-2e. Drlg. sh. and sdy. sh. 6,794 ft.
Amerada Pet. Corp. No. 2 Mrs. C. B. Machine, Sec. 6-2s-3e. Loc.
Amerada Pet. Corp. No. 1 Merchants & Planters Bnk., Sec. 41-1s-3e. Loc.
Amerada Pet. Corp. No. 1 Robert Irion, Sur., Sec. 6-2s-3e. 9⅝-in. csg. 1,462 ft.; T.D. 8,684 ft.; 5½-in. csg. 8,601 ft.; top Wilcox 8,337 ft.
Amerada Pet. Corp. No. 1 Stokes, Sec. 41-1s-3e. Drlg. sh. 4,672 ft.
Amerada Pet. Corp. No. 1 R. L. Whitlow, Sec. 6-2s-3e. Loc.
W. C. Feazel No. 1 Leila Keller, Sec. 7-2s-1e. Drlg. sh.&L. 8,275 ft.
Gulf Expln. Co. No. 5 Samuel Haas Est., Sec. 8-2s-3e. T.D. 7,006 ft.; P.B. 6,450 ft.; crooked hole: sdtrkd.; T.D. 8,584 ft.; 5½-in. csg. 8,584 ft.; perf. csg. 8,560-80 ft.; flwd. S.W.; went dead; S.D.
Geo. E. Lilly et al No. 1 Haas Inv. Co., Sec. 1-2s-2e. 10¾-in. csg. 1,500 ft.; drlg. sdy. sh.&L. 6,538 ft.
Pomo Prod. Co. No. 2 Sentell, Sec. 8-2s-3e. Drlg. sh.&L. 8,464 ft.
Sid Richardson No. 1 Sam Hasse, Sec. 1-2s-2e. Drlg. sh. 5,161 ft.
Sid Richardson No. 3 State-Bayou Bouef, Sec. 6-2s-3e. R.U.
Sid Richardson No. 2 State Bayou Boenf, Sec. 7-2s-3e. T.D. 7,059 ft.; P.B.; sdtrkd.; drlg. sh. 1,995 ft.

Fausse Point—Iberia Parish

Texas Co. No. 6 State, Twp. 11s-8e. Drk.

Garden Island—Plaquemines Parish

Texas Co. No. 35 State, Sec. 38-23s-33e. Drlg. sdy. sh. 4,505 ft.

Golden Meadows—La Fourche Parish

Wm. Helis-Danciger O. & R. Co. No. 1 Sch. Bd., Sec. 12-19s-22e. Cg. sd. and shells 2,662 ft.; D.S.T. 2,639-57 ft.; rec. 186 ft. oil, 10 ft. oil and wtr.
Geo. Lilly et al No. 1 Jack Collins, Sec. 12-19s-22e. T.D. 8,897 ft.; 7-in. csg 6,102 ft.; oil sd. 5,150-73 ft.
M. H. Marr and R. A. Bristol No. 1 Church property, Sec. 2-19s-22e. Drlg. sh. 7,142 ft.
M. H. Marr & G. H. Vaughn No. 1 Adam Terrebonne, Sec. 9-19s-22e. Drk.
M. H. Marr and G. H. Vaughn No. 1 B. & D. Unit, Sec. 12-19s-22e. 10¾-in. csg. 2,301 ft.; S.D. 9,050 ft.; wash to bttm.
Martex Pet. Corp. No. 2 Falgout Holding Co., Sec. 9-19s-22e. 10¾-in. csg. 2,401 ft.; drlg. sh. 4,246 ft.
St. Mary Oil Co. No. 1 Choust Unit, Sec. 12-19s-22e. S.D. 7,266 ft.
Taylor Fithian et al No. 1 Etenne Perrin, Sec. 12-19s-22e. R.U.
Terouche Oil Co. No. 1 D. B. Cheramie, Sec. 12-19s-22e. T.D. 6,230 ft.; 7-in. csg. 4,466 ft.; perf. csg. 4,406-22 ft.
Texas Co. No. 2 Golden Meadows, Sec. 78-19s-21e. R.U.
Texas Co. No. 2 La Terre, Sec. 6-20s-22e. Drlg. sdy. sh. 6,764 ft.
Texas Co. No. 2 State-Catfish Lake, Sec. 3-20-21e. Drlg. sh.&L. 9,500 ft.
Texas Co. No. 3 State-Catfish Lake, Sec. 76-19s-21e. Loc.

Grand Bay—Plaquemines Parish

Gulf Oil Corp. No. 6-A Grand Prairie Lv. Dist., Sec. 17-20s-10e. Drlg. sh. 1,866 ft.
Gulf Oil Corp. No. 2 State, Sec. 6-20s-19e. 9⅝-in. csg. 9,431 ft.; T.D. 10,300 ft.; 7-in. csg. 10,299 ft.; perf. 9,275-90 ft.; flowed oil and S.W.; perf. csg. 8,980-90 ft.; tstd. dist.

Grand Lake—Cameron Parish

Amerada Pet. Corp. No. 1 Mallard Bay-State, Sec. 12-13s-4w. Loc.
Superior Oil Co. No. 2 State, Twp. 13s-4w. Drlg. sd. 6,800 ft.

Hackberry—Cameron Parish

Gulf Oil Corp. No. 25-A Erwin, Sec. 13-12s-10w. Drk.
Stanolind O. & G. Co. No. 28-A Gulf fee, Sec. 30-12s-10w. T.D. 7,037 ft.
Superior Oil Co. No. 1 R. Vincent, Sec. 31-12s-10w. Drlg. sd.&sh. 6,684 ft.
Texas Co. No. 26 State, Twp. 12s-9w T.D. 8,038 ft.; P.B. 7,838 ft.; I.P. 518 B.P.D.; 14/64-in. ck.
Union Sulphur Co. No. 8 Caldwell, Sec. 37-2s-10w. T.D. 7,344 ft.; 7-in. csg. 7,319 ft.; I.P. 627 B.P.L.O.P.D.; ¼-in. ck.
Union Sulphur Co. No. 12 Doiron, Sec. 37-12s-10w. T.D. 8,064 ft.; P.B.; sdtrkd.; cg. sd. and rock 7,320 ft.
Union Sulphur Co. No. 1 Josephine O'Quinn, Sec. 37-12s-10w. T.D. 6,927 ft.; sdtrkd.; 7-in. csg. 8,014 ft.; T.S. 8,220 ft.; T.D. 9,665 ft.; P.B. 7,706 ft.; perf. csg. 7,696-7,704 ft.; tstg.

Horseshoe Bayou

Texas Co. No. 2 St. Mary Parish Ld. Co., Sec. 37-17s-9e. 7⅝-in. csg. 10,858 ft.; drilled out to 10,883 ft.; make D.S.T.

Jefferson Island—Iberia Parish

Phillips Pet. Co. No. 1 Breaux, Sec. 41-12s-5e. T.D. 8,461 ft.; P.B.; sdtrkd.; drilled to T.D. 6,174 ft.; stuck D.S.; fsg.
Texas Co. No. 2 State-Lake Peigneur, Twp. 12s-5w. T. salt 7,419 ft.; T.D. 7,437 ft.; P.B. 6,292 ft.; P.B. and sidetracked; T.D. 7,964 ft.; salt; sdtrk. 6,322 ft.; drlg. sdy. sh. 6,407 ft.

Jennings—Acadia Parish

Carter-Perrin & Brian No. 2 Valle, Sec. 47-9s-2w. T.D. 1,793 ft.; run 7-in. csg.
Illes Pet. Co. No. 4 Synd., Sec. 41-9s-2w. T.D. 1,540 ft.; 7-in. csg. 1,535 ft.
Guaranty Oil Co. No. 3 Houissere Latrelle, Sec. 47-9s-2w. T.D. 1,715 ft.; 7-in. csg. 1,700 ft.
St. Mary Oil Co. No. 1 Gulf fee, Sec. 45-9s-2w. R.U.
Shell Oil Co., Inc., No. 7 Conover, Sec. 40-9s-2w. Drlg. L. 5,264 ft.
Stanolind O. & G. Co. No. 114 Crowley Oil & Mineral Co., Sec. 48-9s-2w. T.D. 3,755 ft.; P.B. 1,293 ft.; P.B. 1,900 ft.; sdtrkd.; T.D. 4,581 ft.; 10¾-in. csg. 4,578 ft.; drlg. sh. 7,027 ft.
Superior Oil Co. No. 4 Moresi, Sec. 41-9s-2w. Drlg. sd. 6,936 ft.

Lafitte—Jefferson Parish

Texas Co. No. 13 Lafitte, Sec. 17-17s-24e. Drlg. sh.&L. 9,313 ft.
Texas Co. No. 14 Lafitte, Sec. 20-17s-24e. Loc.
Texas Co. No. 2-B Madison Realty Co., Sec. 19-17s-24e. Drlg. sh. 5,593 ft.
Texas Co. No. 2 Sch. Bd., Sec. 20-17s-24e. T.D. 6,601 ft.; sdtrkd. 6,375 ft.; went back into old hole; trying to sdtrk. at 6,387 ft.; T.D. 10,766 ft.; 7-in. csg. 10,195 ft.; perf. csg. 9,876-9,900 ft.; D.S.T. failed; perf. csg. 10,071-83 ft.; I.P. 1,192 B.P.D.; ⅝-in. ck.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 10 La Fourche Basin Levee Dist., Sec. 2-18-25e. Drlg. sh. 5,011 ft.

Lake Long—La Fourche Parish

Fohs Oil Co. No. 9 State, 600 ft. S of No. 6 State in lake, Twp. 17s-19e. Drlg. sdy. sh. 8,670 ft.

Leeville—La Fourche Parish

Texas Co. No. 71 L.L.&E., Sec. 27-21s-22e. 10¾-in. csg. 1,141 ft.; drlg. sh. 6,630 ft.

Lake Mongoulois—St. Martin Parish

Texas Co. No. 7 State, Sec. 10-10s-9e. Drlg. sh. 9,890 ft.

Lake Pelto—Terrebonne Parish

Texas Co. No. 26 State, Sec. 18-23s-18e. Cg. sh. 5,766 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 W. E. Mont, Sec. 32-19s-19e. Loc.
Humble O. & R. Co. No. 3 Laterre Land Co., Sec. 32-19s-19e. Drlg. sh. 7,250 ft.

New Iberia—Iberia Parish

Canal Oil Co. No. 13 Bernard, Sec. 54-12s-7e. Drlg. sh. 2,560 ft.
Wm. Helis No. 6 Sabatier, Sec. 53-12s-2e. T.D. 2,451 ft., salt; P.B. 2,204 ft.
Wm. Helis No. 7 J. E. Schwing, Sec. 56-12s-7e. T.D. 5,640 ft.; W.O.C.
Texas Co. No. 2 Bryant, Sec. 25-12s-7e. R.U.
Texas Co. No. 1 Frances Compton, Sec. 71-12s-7e. Drlg. sd.&L. 7,562 ft.
Texas Co. No. 1 Anna B. Schwing, Sec. 71-12s-7e. Drlg. sh.&L. 7,214 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 2 Staker, Sec. 33-8s-1e. T.D. 2,040 ft.; run 10¾-in. csg.

North Tepetate—Acadia Parish

Atlantic Ref. Co. No. 5 Klumpp, Sec. 7-7s-1w. Drlg. sdy. sh. 8,325 ft.
St. Mary Oil Co. No. 1 Dr. H. Jenkins, Sec. 12-7s-2w. T.D. 9,138 ft.; abd.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 7 Cormier, Sec. 4-6s-5e. R.U.
Pan American Prod. Co. No. 8 Cormier, Sec. 4-6s-5e. R.U.
Pan American Prod. Co. No. 3 Haas & Hirsch, Sec. 4-6s-5e. T.D. 6,932 ft.; cleaned hole, drlg. ahead.
Smith & McDannald No. 1 S. W. Futral, Sec. 20-6s-5e. T.D. 4,841 ft., salt; P.B.; prep. to sdtrk.; T. salt 4,832 ft.; sidetracked; T.D. 4,160 ft.; stk. D.S.; sidetracked at 3,000 ft.; drld. to 4,160 ft.; stk. D.S.; P.B. 3,025 ft.; sdtrkd.; P.B. 1,800 ft.; sdtrkd.; T.D. 160 ft.; fsg.
Y. D. Spill No. 1 Gaudet, Sec. 4-6s-5e. S.D. 4,700 ft.

Potash—Plaquemines Parish

Humble O. & R. Co. No. 39 Orleans Lve. Bd., Sec. 13-8s-15e. 16-in. csg. 244 ft.; T.D. 4,548 ft.; stk. D.S.; repair rig.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp. No. 3-A Plaquemines Ld. Co., Sec. 7-19s-17e. Loc.
Gulf Oil Corp. No. 9 State QQ, Sec. 18-19s-17e. Loc.
Gulf Oil Corp. No. 5 State, Sec. 17-19s-17e. Loc.

Raceland—La Fourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., Sec. 34-15s-19e. 18⅝-in. 11,312 ft.; T.A.
Tide Water Asso. Oil Co. No. 2-A South Coast Corp., Sec. 34-15s-19e. 10,461 ft. 5½-in. csg. 10,253 ft.; perf. csg. 10,120-138 ft.; csg. began to leak; cmtd.; P.B. 9,300 ft.; csg. parted at 1,244 ft.; cemented break; perf. csg. 10,120-38 ft.; I.P. 24 B.O.P.D.; 9/64-in. ck.

Sorrento—Ascension Parish

Pan American Prod. Co. No. 16 United Ld. Co., Sec. 15-10s-4e. S.D. 1,472 ft.
Pan American Prod. Co. No. 17 United Ld. Co., Sec. 15-10s-4e. T.D. 905 ft.; 5½-in. csg. 889 ft.
Sorrento Synd. No. 1 L. L. Bernard, Sec. 27-10s-4e. R.U.

South Houma—Terrebonne Parish

Shell Oil Co., Inc., No. 1 Duplantis, Sec. 74-18s-18e. T.D. 2,530 ft.; 10¾-in. csg. 2,521 ft.; W.O.C.

South Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Calcasieu Natl. Bnk., Sec. 36-10s-4w. T.D. 9,867 ft.; 8⅝-in. csg. 9,867 ft.; W.O.C.

Starks—Calcasieu Parish

Skelly Oil Co. No. 1 Industrial Lbr. Co., Sec. 20-9s-12w. Drlg. sh. 4,360 ft.

Valencia—La Fourche Parish

T. G. Markley and Mohawk Oil Corp. No. 1 Deusson Hrs., Sec. 100-17s-20e. T.D. 6,905 ft.; sdtrkd.; T.D. 6,825 ft.; 7-in. csg. 6,228 ft.; perf. csg. 6,145-51 ft.; tstd. dist.
Pan American Prod. Co. No. 20 Harang, Sec. 8-17s-20e. T.D. 4,608 ft.; sdtrk.; drlg. sd. 6,210 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co. No. 5 Buras Lv. Bd., Sec. 23-21s-30e. T.D. 8,616 ft.; cutting screen.
Tide Water Asso. Oil Co. No. 10 Manhattan Ld. & Fruit Co., Sec. 26-21s-30e. S.D. 290 ft.

Villa Platte—Evangeline Parish

Continental Oil Co. No. 1 Attales, Sec. 45-3s-2e. Drlg. sh. 8,315 ft.
Continental Oil Co. No. 2 Fontenot, Sec. 46-3s-2e. Drlg. sd. 9,019 ft.
Continental Oil Co. No. 3 Haas, Sec. 44-3s-2e. R.U.
Continental Oil Co. No. 3 Hirsch, Sec. 44-3s-2e. Drlg. sh. 7,937 ft.
Continental Oil Co. No. 2 Opelousas, Sec. 44-3s-2e. Drlg. sh. 10,012 ft.
Continental Oil Co. No. 4 Opelousas St. Landry Security Co., Sec. 44-3s-2e. Loc.
Continental Oil Co. No. 3 Orise Deville, Sec. 46-3s-2e. T.D. 9,035 ft.; rng. csg.
Continental Oil Co. No. 3 Pitre, Sec. 44-3s-2e. Loc.
Continental Oil Co. No. 4 Vidrine, Sec. 46-3s-2e. Loc.

Welsh—Jeff Davis Parish

C. W. Buckley et al No. 1 Calcasieu Natl. Bnk., Sec. 34-9s-5w. T.D. 6,545 ft.; abd.

West Gueydan—Vermilion Parish

Magnolia Pet. Co. No. 2 J. B. Ferguson, Sec. 5-12s-2w. Drlg. sh. 7,140 ft.

West Lake Verret—St. Mary Parish

Shell Oil Co., Inc., No. 3 Jeanerette Lbr Co. 10¾-in. csg. 2,493 ft.; T.D. 10,004 ft.; fsg.
Shell Oil Co., Inc., No. 1 Michel, Sec. 1-14s-12e. Driving piling.

Woodlawn—Jeff Davis Parish

Union Sulphur Co. No. 5 Calcasieu Natl. Bnk., Sec. 12-9s-6w. Cg. sh. 9,603 ft.
Union Sulphur Co. No. 1 Raymond Hebert, Sec. 6-9s-5w. Drlg. sd. 6,801 ft.
Union Sulphur Co. No. 1 M. F. Johnson, Sec. 12-9s-6w. T.D. 9,500 ft.; rmg.
Union Sulphur Co. No. 3 Mrs. O'Miller, Sec. 7-9s-5w. Drk.

S. LOUISIANA WILDCATS

Acadia Parish

Tri Parish Drillers, Inc., No. 1 Paul Stag, Sec. 4-7s-1w. M.I. rig.

Allen Parish

Bel Oil Corp. No. 1 J. A. Bel, Sec. 22-6s-3w. Cd. gas sd. 6,257-87 ft.; S.W. sd. 6,287-97 ft.; T.D. 9,010 ft.; run 7-in. csg. 8,595 ft.; perf. csg. 8,549-52 ft.; tstd. 40 lb. pres.; rec. 18 stands S.W.; drlg. mud cut with gas and dist.; perf. csg. 6,917-19 ft.; tstd. S.W.; P.B. 6,004 ft.; perf. csg. 6,041-50 ft.; rec. 3 stands oil, 15 stands of oil and gas-cut mud showing S.W.; sqzd. perf.; perf csg. 6,025-36 ft.; tstd. 600 lb. pres.; rec. 4 stands drlg. mud, slight trace of dist.; sqzd. perf.; perf. csg. 6,040-50 ft.; tstd. 25 lb. pres.; dropped to 0; rec. 11 stands of fresh wtr.; 8 stands mud and sd., slightly salty; perf. csg. 7,272-92 ft.; I.P. 20 bbl. 25-grav. dist. P.D.; 10/64-in. ck.

Assumption Parish

Shell Oil Co. No. 1 Ellis, Sec. 66-16s-14e. Drlg. sh. 11,212 ft.

Avoyelles Parish

Adams O. & G. Co. et al No. 1 Poor Farm, Sec. 8-2n-4e. 9⅝-in. csg. 1,024 ft.; drlg. S.W. sd. 4,690 ft.; top Sparta 4,681 ft.
C. B. Bunte No. 1 Hines Tie & Timber Co., Sec. 24-3n-2e. Drk.
G. C Koch et al No. 1 Purdy Hess Lbr. Co., Sec. 25-2n-3e. O.W.D.D.; T.D. 6,054 ft.; M.I.R.

Beauregard Parish

Atlantic Ref. Co. No. 1 Lutcher Moore, Sec. 22-3s-11w. Loc.
Atlantic Ref. Co. No. 1 Rice Ld. & Lbr. Co., Sec. 22-3s-11w. Loc.
Atlantic Ref. Co. No. 1-A Rice Ld. & Lbr. Co., Sec. 22-3s-11w. T. Cook Mtn. 6,628 ft.; T.D. 8,518 ft.; 5½-in. csg. 8,518 ft.; P.B. 8,384 ft.; perf. csg. 8,282-97 ft.; tstd. 35 lb. pres.; rec. 51 stands S.W.; sqz. perf.; perf. csg. 7,720-40 ft.; tstd. S.W.; perf. csg. 7,585-7,600 ft.; tested S.W.; S.D.
Standard Oil Co. of Calif. No. 1 Long Bell Lbr. Co., Sec. 23-4s-9w. T. Cckfld. 6,949 ft.; 9⅝-in. csg. 7,830 ft.; cd. top Wlx. sd. 9,630 ft.; T.D. 10,692 ft.; fsg.

Calcasieu Parish

Gulf Coast Drlg. Co. No. 1 Langdon, Sec. 13-10s-13w. Drk.
Humble O. & R. Co. No. 1 Edgewood Ld. & Logging Co., Sec. 32-7s-10w. Drlg. sdy. sh. 7,602 ft.

Evangeline Parish

Continental Oil Co. et al No. 1 Mrs. Lillie Manuel, Sec. 33-4s-1w. T. Vicksburg 7,740 ft.; T.D. 11,341 ft.; P.B. 10,145 ft.; 9⅝-in. csg. 10,244 ft.; perf. csg. 9,852-65 ft.; rec. mud on D.S.T.; top Wilcox 10,960 ft.; perf. csg. 9,885-9,902 ft.; rec. drlg. mud; abd.

Iberia Parish

Texas Co. No. 3-B State-Vermilion Bay, Twp. 16s-5e. T. salt 5,970 ft.; B. salt 7,540 ft.; 9⅝-in. csg. 7,705 ft.; T.D. 10,241 ft.; run csg.

Iberville Parish

Housh & Thompson No. 1 Kessler & Folse, Sec. 40-11s-13e. T.D. 9,165 ft.; fsg.; sdtrkd.; drld. to 8,929 ft.; P.B. 8,775 ft.; W.O.C.
Humble O. & R. Co. No. 1-B A. Wilberts Lbr. & Shingle Co., Sec. 78-8s-8e. 20-in. csg. 165 ft.

Jeff Davis Parish

R. M. Bleakie et al No. 1 Lack-Moore Co., Ltd., Sec. 29-7s-6w. 13⅜-in. csg. 65 ft.; 9⅝-in. csg. 1,123 ft.; T.D. 7,510 ft.; abd.
Stanolind O. & G. Co. No. 3-B Ervin & Bishop, Lot 15, Sec. 7-9s-5w. Drlg. sh.&L. 6,223 ft.
Union Sulphur Co. No. 1 H. B. Tietje, Sec. 36-7s-4w. T.D. 9,220 ft.; 7-in. csg. 8,227 ft.; perf. csg. 8,051-65 ft.; swbd. S.W.; pulling screen and lnr.; P.B. 7,648 ft.; perf. csg. 7,632-46 ft.; showing S.W. and oil; P.B. 7,639 ft.; perf. csg. 7,628-38 ft.; failed to flw.; prep. to reperf. csg.; perf. csg. 7,629-33 ft.; swbd. dry; perf. csg. 7,636-38 ft.; swbd. S.W.; perf. csg. 7,582-96 ft.; tstd. S.W., small show of oil; sqzd. perf.; reperf csg. 7,549-57 ft.; tstd. S.W.; perf. csg. 7,504-12 ft.; rec. S.W.; abd.
Union Sulphur Co. No. 2 H. B Tietje, Sec. 36-2s-4w. Drlg. 50 ft.

La Fourche Parish

J. Perry Scranton No. 2 Martinez, Sec. 132-15s-17e. T.D. 9,003 ft.; 7-in. csg. 9,000 ft.
Texas Co. No. 1 L.L.&E. Golden Meadows, Sec. 77-19s-21e. 9⅝-in. csg. 10,744 ft.; T.D. 12,526 ft.; P.B. 11,810 ft.; made sqze. job; perf. csg. 10,769-71 ft.; tstd. S.W.; P.B. 10,269 ft.; stk. D.S.; drlg. on junk; perf. csg. 8,975-90 ft.; tstd. dry gas, 2,750 lb. W.P.; perf. csg. 7,300-20 ft., rec. drlg. mud; perf. csg. 4,400-30 ft.; tstd. dry gas; sqzd. perf.; perf. csg. 4,405-4,530 ft.; perf. csg. 4,400-50 ft.; tstd. dry; perf. csg. 2,675-80 ft.; set retainer; W.O.C.
Tide Water Asso. Oil Co. No. 1 Delta Farms, Inc., Sec. 6-17s-23e. Loc.

Livingston Parish

Fowler & Tower No. 1 Ellis Hood, Sec. 37-7s-3e. Drlg. sd. 6,182 ft.

Orleans Parish

W. T. Burton No. 3-B Faubourg de Montluzin, Sec. 1-11s-13e. Drlg. sh. 8,200 ft.
W. T. Buton No. 1 L.&N.R.R., Sec. 18-11s-15e. T.D. 9,000 ft.; 7⅝-in. csg. 8,820 ft.; T.D. 10,138 ft.; well tried to blow out; set retainer; T.D. 10,040 ft.; P.B. 9,740 ft.; sdtrkd.; cg. sh. 10,134 ft.
W. T. Burton No. 3 L.&N.R.R., Sec. 25-11s-14e. Loc.
W. T. Burton No. 2 State-Lake Pontchartrain, Twp. 10s-10e. Loc.

Plaquemines Parish

Gulf Oil Corp. No. 8 State P.P., Sec. 18-23s-31e. Loc.
Texas Co. No. 1 State-Bastian Bay, Sec. 43-20s-28e. Loc.

St. Bernard Parish

Carter, Molero & Brian, Sec. 129-14s-14e. Drk.
Gulf Ref. Co. No. 4-State-R.R. (Lake Borgne), Twp. 12s-15e. 9⅝-in. csg. 8,161 ft.; T.D. 10,632 ft.; P.B. 9,700 ft.; rmd. to 9,658 ft.; lost core bbl.; P.B. sdtrkd. 8,912 ft.; T.D. 10,528 ft.; 7-in. csg. 10,494 ft.; fsg.
Vendome Pet. Co. No. 2 Kenilworth Plantation, Sec. 59-13s-14e. T.D. 11,234 ft.; abd.

St. Landry Parish

Deep Rock Oil Co. No. 1 B. Babineaux, Sec. 39-8s-4e. T.D. 8,975 ft.; abd.

St. Martin Parish

Shell Oil Co., Inc., No. 1 Iberville Ld. Co., Sec. 86-8e-7s. Loc.
Texas Co. No. 12 St. Martin, Sec. 21-8s-7e. Drlg. sh.&L. 7,252 ft.

St. Mary Parish

Perry S. Cooney No. 1 A. W. Allain, Sec. 46-13s-9e. S.D. 2,600 ft.

St. Tammany Parish

Honey Island Dev. Corp. No. 1 W. C. Forbes, Sec. 33-7s-15e. T.D. 100 ft.; 20-in. csg. 87 ft.

Terrebonne Parish

Shell Oil Co., Inc., No. 1-A Peters, Sec. 47-19s-19e. Dredge canal.
Texas Co. No. 3 State-Coon Point, Twp. 23s-14e. Loc.

Vermilion Parish

La. Ld. & Expln. Co. No. 1 La. Fur. Co., Sec. 21-15s-1e. T.D. 10,525 ft.; D.S. stuck.

Vernon Parish

W. T. Burton No. 1 W. T. Burton Mineral fee, Sec. 32-1n-6w. Drlg. sh. 7,585 ft.
Nat Hunter et al No. 1 W. T. Burton fee, Sec. 13-2n-5w. Drk.

West Feliciana Parish

McKay et al No. 1 James Montgomery. R.U.

TEXAS

Week Ending July 15

GULF COAST FIELDS

Old Ocean—Brazoria County

Harrison & Abercrombie No. 2 Larsen et al, C. Breen Sur. 9⅝-in. csg. 7,000 ft.; T.D. 10,552 ft.; perf. csg. 10,040-10,100 ft.; I.P. 276 B.P.D.; various chokes.
Harrison & Abercrombie No. 1 C. W. Markle, Polly & Chance Sur. 9⅝-in. csg. 7,016 ft.; T.D. 11,079 ft.; sdtrkd.; drlg. sh.&sd. 9,836 ft.
Harrison & Abercrombie No. 2 Osburn, C. Breen Sur. 9⅝-in. csg. 7,000 ft.; T.D. 10,334 ft.; 7-in. csg. on bottom; W.O.C.
Mid-Continent Pet. Corp. No. 1 Wm. Chenault, C. Breen Sur. 9⅝-in. csg. 7,000 ft.; drlg. sh. 7,630 ft.
Sun Oil Co. No. 3 Campbell, C. Breen Sur. 13⅜-in. csg. 1,565 ft.

Cedar Point—Chambers County

Standard of Texas et al No. 13-117 State. 10¾-in. csg. 1,600 ft.; drlg. sh. 7,290 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 2 Hoffman, T.&N.O. Sur. No. 131. R.U.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 State, Tr. No. 39. Loc.

West Columbia—Brazoria County

Texas Co. No. 33 Abrams, G. Tennille Sur. Drlg. sh.&L. 3,456 ft.

Thompson—Fort Bend County

H. M. Naylor No. 1 M. W. Shanks, Horatio Chrisman Sur. Drlg. 6,720 ft.
H. M. Naylor No. 5 Musselman, H. Chrisman Sur. R.U.

Caplen—Galveston County

Sun Oil Co. No. 1 Zinn & Forman, S. F. Hughes Sur. Bldg. drk.

League City—Galveston County

Phillips Pet. Co. No. 5 Bertha Lobit Wilson, Perry & Austin Sur. 10¾-in. csg. 2,541 ft.; S.D. 8,685 ft., high wtr.
Phillips Pet. Co. No. 1 Dugan, S. F. Austin Sur. S.D. 2,600 ft.
Phillips Pet. Co. No. 1 Rice, Perry & Austin Sur. S.D. 7,735 ft.
Phillips Pet. Co. No. 1 West Prod. Co., Perry & Austin Sur. S.D. 2,600 ft.
Phillips Pet. Co. No. 3 Lobit Wilson, Perry & Austin Sur. S.D. 9,235 ft., high wtr.
West Prod. Co. No. 1 fee, Lot 2, Blk. 5, Perry & Austin Sur. Loc.

Clear Lake—Harris County

Humble O. & R. Co. No. 10-C Humble-West, J. Lindsay Sur. Drlg. sh. 3,720 ft.
Humble O. & R. Co. No. 14-C Humble-West, J. Lindsay Sur. Loc.
Stanolind O. & G. Co. No. 2 Sowden, J. Lindsay Sur. Drlg. sh. 2,330 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 2 Edwards, Reels & Trobough Sur. Drk.
Stanolind O. & G. Co. No. 2 Oates, C. Martinez Sur. Loc.

Eureka—Harris County

Jack Frazier No. 1 W. T. Helberg, H. Reinerman Sur. R.U.
Houston Oil Co. No. 3 Helberg & Lackner, J. Reinerman Sur. Loc.
Tide Water Asso. Oil Co. No. 2-B Lackner, H. Reinerman Sur. T.D. 8,090 ft.; perf. csg. 8,040-50 ft.; sqzd. perf.; perf. csg. 7,934-44 ft. and 7,944-49 ft.; flowed 3 B.P.H.; S.I.

Fairbanks—Harris County

Kirby Pet. Co. et al No. 1 Hillebrenner, T. M. Dorsett Sur. 9⅝-in. csg. 1,300 ft.; T.D. 6,849 ft.; perf. csg. 6,843-46 ft.; flwg. gas; made sqze. job; reperf. csg.; tstg.
Union Prod. Co. No. 1 C. H. Daniel, S. S. Reynolds Sur. 10¾-in. csg. 1,479 ft. perf. csg. 6,830-41 ft.; tstg.

Friendswood—Harris County

Humble O. & R. Co. No. 31 Humble-West, L. Hemenway Sur. Drlg. sh. 4,620 ft.
Humble O. & R. Co. No. 2 Keller, T. Choate Sur. Drlg. sh. 1,680 ft.

South Houston—Harris County

Commerce Oil Co. No. 1 O. R. Staitl, Callahan & Vince Sur. 10¾-in. csg. 1,516 ft.; T.D. 7,554 ft.; well tried to blow out; stk. D.S.; fsg.

Francitas—Jackson County

Crosby Drlg. Co. No. 1 Hale & Allee, Green Sur. T.D. 8,804 ft.; abd.

Clam Lake—Jefferson County

Shell Oil Co., Inc., No. 3 McFaddin, McFaddin Sur. T.D. 4,001 ft.; P.B. 2,048 ft.; made sqz. job 2,042-47 ft.; W.O.C.

La Belle—Jefferson County

Sun Oil Co. No. 5 Broussard-Hebert, T. &N.O. Sur. No. 207. 18⅝-in. csg. 130 ft.; T.D. 7,650 ft.; cmtd. 9⅝-in. csg.; set plug 7,555-7,640 ft.; drld. cement to 7,700 ft.; W.O.C.

Lovells Lake—Jefferson County

Humble O. & R. Co. No. 5 Broussard, M. Grange Sur. Cg. 7,849 ft.
Humble O. & R. Co. No. 6 Broussard, M. Grange Sur. Loc.
Humble O. & R. Co. No. 5 Jefferson Ld. Co., C. Hillebrandt Sur. Drlg. sh. 4,920 ft.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 6 Phelan, H.T.&.B Sur. No. 1. R.U.

South China—Jefferson County

Geo. Echols et al No. 2 Fontenot, H.T.& B. Sur. No. 17. 10¾-in. csg. 1,134 ft.; drlg. 6,536 ft.
Magnolia Pet. Co. No. 1 Broussard, H.& T.C. Sur., Sec. 18. R.U.

Esperson—Liberty County

General Crude Oil Co. No. 4-B Esperson, A. McNeil Sur. Drlg. sh. 1,964 ft.
General Crude Oil Co. No. 5-B Esperson, A. McNeil Sur. Drlg. sh.&sd. 1,860 ft.

Hardin—Liberty County

Gulf Oil Corp. No. 4 Cessna, H. B. Johnston Sur. R.U.

North Markham—Matagorda County

Ohio Oil Co. No. 2 Carlson, I.&G.N. Sur. No. 2. 10¾-in. csg. 1,472 ft.; T.D. 6,886 ft.; P.B. to strghtn. hole; T.D. 7,274 ft.; rmg.

Orange—Orange County

John Mayo No. 1 M. J. Williams, Dyson Sur. R.U.

Ace—Polk County

Dick Schwab No. 1-C Kirby-West Lbr. Co., G. A. Thomas Sur. Loc.
Shell Pet. Corp. No. 2 Doucett, P. A. Sublett Sur. Loc.

Segno—Polk County

Gulf Oil Corp. No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp. No. 1 Ragan, I.&G.N. Sur. No. 15. Drlg. sh.&L. 3,300 ft.
Gulf Oil Corp. No. 21 Wing, I.&G.N. Sur. No. 14. Drlg. sh. 2,180 ft.
Humble O. & R. Co. No. 13-B Kirby Lbr. Co., P. Garcia Sur. Bldg. rd.
Humble O. & R. Co. No. 14-B Kirby Lbr. Co., M. Victor Sur. T.D. 8,190 ft.; failed to flow; cg. deeper.

Orange—Port Neches

Texas Co. No. 15 Kuhn, A. E. Hall Sur. 10-in. csg. 1,794 ft.; drlg. sh. 5,740 ft.

Spurger—Tyler County

Republic Prod. Co No. 21 fee, N. Hurd Lge. 9⅝-in. csg. 1,807 ft.; T.D. 7,743 ft.; 5½-in. csg. 7,735 ft.; perf. csg. 7,635-40 ft.; flwd. oil and S.W.; retstg.
Republic Prod. Co. No. 22 fee, N. Hurd Lge. Drlg. sh. 8,012 ft.
Republic Prod. Co. No. 23 fee, A. Sterne Lge. Loc.

GULF COAST WILDCATS

Brazoria County

Fabriguze et al No. 1 Freeport Sulphur, Stephen F. Austin Sur. (Byran Mound). M.I.M.

Hamman Expltn. Co. No. 1 Darrington, Achilles McFarland Sur. 10¾-in. csg. 1,200 ft.; 7-in. csg. 8,887 ft.; T.D. 8,917 ft.; P.B. 8,490 ft.; sdtrkd.; T.D. 9,012 ft.; S.D.

Hamman Expltn. Co. No. 2 Darrington, State Prison Farm, F. Bingham Sur. W.O. rig.

Glenn McCarthy No. 1 J. C. Carr, J. D. Valderas Sur. W.O. rig.

Glenn McCarthy No. 1 Houston Farm Dev., James F. Perry and E. Austin Sur. No. 7. S.D. 9,710 ft.

Rowan Drlg. Co. No. 1 Vilren, J. S. Talmage Sur., Sec. 68. Drlg. sh. 5,367 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Plymouth Oil Co. No. 1 Wilburn, Wm. H. Moore Sur. 10¾-in. csg. 1,994 ft T.D. 7,416 ft.; stk. D.S.; sdtrkd.; T.D. 6,978 ft.; fsg.

L. D. Roberts No. 1 C. H. Lanz, T.&N. O. Sur. No. 35. 10¾-in. csg. 1,030 ft.; T.D. 7,609 ft.; abd.

J. R. Turnbull et al No. 1 W. C. Shepherd, R. A. Porter Sur. 10¾-in. csg. 1,150 ft.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.

Fort Bend County

J. H. Blaffer No. 1 J. H. P. Davis, R. Peebles Sur., S flank Thompson field. Loc.

H. R. Cullen No. 1 Booth, Wickson Sur., S flank Big Creek. Loc.

Lloyd Farr et al No. 1 Beard, H.&T.C. Sur. No. 118. Drlg. 860 ft.

C. B. McDaniel et al No. 1 Melanie Settegast, E. P. Whitehead Sur. R.U.

O. J. Martin et al No. 1 W. B. Blakely, J. Frederick Sur. S.D. 8,052 ft.

R. N. Ranger No. 1 Basset Blakeley, Thos. Habermacher Sur. Loc.

Superior Oil Co. No. 1 Shirle Beard et al, H.&T.C. Sur. No. 111. 10¾-in. csg. 1,230 ft.; T.D. 7,524 ft.; sdtrk.; drlg. sh. 4,739 ft.

Woodland Oil Co. No. 1 Herietta Berg et al, H.&T.C. Sur., Sec. 25. T.D. 7,410 ft.; 9⅝-in. csg. 7,391 ft.

Galveston County

Sun Oil Co. No. 1 State. East Galveston Bay. Drlg. sdy. sh. 5,286 ft.

Hardin County

Geo. Echols No. 1 Merchant Est., Stephen Jackson Lge. (E. flank Sour Lake field). Drlg. sh. 4,480 ft.

Norcoff Corp. No. 1 Caswell, B.B.B.&C. Sur. No. 72 (E flank Saratoga dome). T.D. 4,900 ft.; prep. to sdtrk.

Harris County

Coastal Dev. Co. No. 1 J. J. Sweeney, J. C. Ogburn Sur. 10¾-in. csg. 820 ft.; drlg. plug.

Housh & Thompson et al No. 1 J. I. Krey, B. Herra Sur. 10¾-in. csg. 759 ft.; cg. sh. 7,767 ft.

M. I. and Joyce Richardson No. 1 J. J. Sweeney, John Ogburn Sur. Drk.

L. R. Wilhite et al No. 1 Houston-Harris Co. Ship Channel, Nav. dist., Ezekiel Thomas Sur. R.U.

Jackson County

Humble O. & R. Co. No. 1 M. H. Toney, R. Musquiz Sur. 9⅝-in. csg. 1,356 ft.

J. Mayo et al No. 1 J. H. Tucker, R. Musquiz Sur. 10¾-in. csg. 593 ft.; T. D. 5,829 ft.; P.B. 4,980 ft.; trying to sdtrkd. 5,190 ft.

Moore & Ahern No. 1 Victoria Ld. & Loan Co., P. Scott Sur. T.D. 7,010 ft.; S.D.

Norcuff Oil Corp. No. 1 Hollingsworth, Eli Mercer gr. 10¾-in. csg. 466 ft.; S.D. 3,005 ft.

Jasper County

Bob Milner et al No. 1 Cartwright, E. O. LeGrande Sur. 10¾-in. csg. 1,042 ft.; drlg. sh. 6,036 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico. T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.

Humble O. & R. Co. No. 15-B McFaddin Beach State, Gulf of Mexico. 660 ft. NW of No. 13-B. Drlg. sh. 6,570 ft.

Matagorda County

Continental Oil Co. No. 1 Savage, Daniel Yeamans Sur. T. sd. 3,842 ft.; well blew out; killed; T.D. 5,810 ft.; P.B. 4,195 ft.; perf. csg. 4,132-42 ft.; tstd. dry gas; killed; perf. csg. 3,642-52 ft.; tstd. dry gas; perf. csg. 2,940-45 ft.; tstd. dry gas; killed; reperf. csg. 4,132-42 ft.; I.P. 1,509,000 cu. ft. gas.

Orange County

American Eagle Oil Co. No. 2 Geo. Pell, Geo. A. Patillo Sur. Loc.

Polk County

Jack Frazier et al No. 2 Bergman, A. Viesca Sur. T.D. 7,205 ft.; rmg.

Patrick-Tyrell Drlg. Co. No. 1 O. L. Jackson, C. Devore Sur. Loc.

San Jacinto County

F. J. Hynes No. 1 Foster Lbr. Co., M. Brown Sur. Loc.

F. J. Hynes No. 2 Foster Lbr. Co., M. Finch Sur. Loc.

Washington County

Mount Selman Oil Co. No. 1 Fritz Fuelberg, W. Lightfoot Sur. M.I.R.

S. W. TEXAS WILDCATS

Atascosa County

Pulliam & Dixon No. 1 J. T. Henke, A.S. Donovan Sur. No. 145. S.D. 668 ft.

Bastrop County

Joe Hughes et al No. 2 Lentz, Freeman Wilkinson Sur. No. 21. 7-in. csg. 2,260 ft.; swbd. acid wtr. and oil; S.I.

Kirby Pet. Co. No. 1 Meeks, Thos. Garretson Sur. No. 19. T.D. 2,192 ft.; abd.

Bell County

M. M. Gordon No. 1 Steele, Oliver T. Tyler Sur. S.D. 1,201 ft.

G. F. Shelton et al No. 1 Nelson, Michael Griffin Sur. S.D. 1,208 ft.

Bexar County

E. D. Harris No. 1 Schroeder, Luke Bust Sur. No. 37. Drlg. 915 ft.

Joe A. Noake No. 1 Griffin, R. Kirby Sur. M.I.M.

Blanco County

H. C. McCart No. 1 Geo. Lester, Newton Carson Sur. No. 34. Drlg. L. 530 ft.

Brooks County

Magnolia Pet. Co. No. 2 Denman, Jose Marcelo Hinojosa gr. Cg. sh. 6,510 ft.

Caldwell County

Magnolia Pet. Co. No. 1 Morris, Moses Gage Sur. No. 26. 10-in. csg. 280 ft.

Duval County

W. L. Catlin et al No. 1 Louis Escapule, J. Poitevent Sur. No. 73. Loc.

Lee Corkill et al No. 1 Tonkin, Benavides Sur., Sec. 30. S.D. 5,900 ft.

Joe S. Dean et al No. 1 Hyatt, S.&M Sur., Sec. 535. R.U.

W. L. Goldston et al No. 1 J. F. Hyatt, S.&M. Sur. No. 535. Drk.

G. L. Rowsey et al No. 1 Parr. S.A.&M. G.R.R. Sur., Sec. 117. Drk.

Taylor Ref. Co. No. 1 Parr, S.A.&M.G. Sur. No. 117. Drk.

W. A. Wagner No. 1 D. J. Weikel, John H. Gibson Sur. No. 497. R.U. and S.D

Edwards County

O. L. Alderfer and C. W. Davis No. 1 J. A. Earwood, C.C.S.D.&R.G.N.G.R.R. Sur., Sec. 158. S.D. 125 ft.

Goliad County

Crown Central Pet. Co. et al No. 1 C. G. Wood, John Shern Sur. Spd.

Gonzales County

E. E. Young No. 1 Moore, D. O. Warren Sur. M.I.M.

Guadalupe County

C. L. Felty No. 1 Warneke, Vicente Duran Sur. No. 4. S.D. 765 ft.

John Hueners No. 1 Boecker, John Baker Sur. No. 26. S.D. 1,013 ft.

Tide Water Asso. Oil Co. No. 1 Jackson, J. O. Blair Sur. No. 422. Top chalk 2,460 ft.; cd. chalk 2,456-63 ft.; no show.

Hays County

B. C. Mann et al No. 1 Reeder, R. Vaughn Sur. S.D. 582 ft.

Hidalgo County

San Juan Oil Co. No. 1 J. C. Kelly, J. C. Kelly subd., Antonio Velasco Sur., Porc. 70. Drk.

Shary Maddox No. 1 A. C. Neal, Santa Anita gr. Cg. sdy. sh. 6,960 ft.

Pantano Pet. Co No. 1 R. E. Harding, La Mesteña Rnh. subd (La Blanca field). T.D. 8,041 ft.; S.D.

Wheelock & Smith No. 1 Yturria Town & Imp. Co., Anastacio Villareal Por. No. 43. T.D. 4,069 ft.; perf. csg. 3,579-87 ft.; tstd. gas and S.W.; S.D.

Jim Hogg County

Imperial Oil Co. No. 1 Jose M. Gutierrez, H. Rodriquez Sur. No. 142. 10-in. csg. 40 ft.; S.D. 790 ft.

Magnolia Pet. Co. No. 1 Ysaquirre et al, "Agua Nueva de Abajo." J. M. Ramirez Sur. 13⅜-in. csg. 2,063 ft.; drlg. sh. 2,775 ft.

Jim Wells County

Loring Bradstreet No. 1 Rehment, Lot 12, Morro Phillips Sur. Drk.

Gorman & Yoakam No. 1 J. A. Schmidt, Casa Blanca gr. Drlg. sd. 5,552 ft.

Magnolia Pet. Co No. 1 J. O. Maun, Lot 6, Blk. 11. T.D. 6,803 ft.; 7-in. csg. 6,811 ft.; perf. csg. 6,806-10 ft.; tstd. 200 ft. P.L.O., 200 ft. brackish wtr.; squeeze perf.; W.O.C.

W. R. Quinn et al No. 1 D. M. and Fritz Pundt, T. C. Wright Sur. S.D. 4,770 ft. 7-in. csg. 4,770 ft.; T.D. 5,415 ft.; P.B. 4,761 ft.; set 5-in. csg. 4,892 ft.; drld. out 4,810 ft.; flowing 24 bbl. water-white dist P.D.; ¼-in. ck.; T.P. 1,800 lb.; C.P. 1,900 lb.; S.I.

Smith & Storey No. 1 Shaeffer, Stanley Welch Sur. No. 90. T.D. 2,335 ft.; 5½-in. csg. 2,335 ft.; perf. csg. 2,194-2,204 ft.; tstd. S.W.; S.D.

Karnes County

Paul Meador No. 1 Ruhman, J. Richardson Sur. Drk.

Kendall County

C. M. Dewey No. 2 Seidensticker, R. Davis Sur. No. 20. S.D. 714 ft.

Kimble County

W. S. Kelly No. 1 A. L. Bierchwale, D. Lloyd Sur. S.D. 135 ft.

La Salle County

C. B. Johnson et al No. 1 Yeager, A.B. &M. Sur. No. 53. Loc.

Lavaca County

W. L. Goldston No. 1 Turk, Edwards Sur. Drlg. sh. 7,186 ft.

Lee County

Fred Pederson et al No. 1 Brown, David Hudson Sur. Pmpd. 100 B.F.; 36 hrs.; 3 bbl. oily emulsion; cd. L. 6,461-90 ft.; T.D. 6,571 ft.; S.D.

Live Oak County

Salviejo Oil Co. No. 1 J. W. Hines et al, Sec. 98, Blk. 3953, J. W. Mackey Sur. No. 399. Drlg. rock 3,462 ft.

L. W. Stieren No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

G. W. Basom No. 1 Jacob, W. H. Jacob Sur. No. 50. T.D. 950 ft.; abd.

Gordon Griffin No. 1 Dilworth, R. A. Moore Sur. T.D. 2,610 ft.; abd.

C. D. Scarborough No. 1 First Natl. Bk. of Rosebud, James Garner Sur. S.D. 43 ft.

C. C. Shumway and C. H. Burns No. 5 Shiner, Wm. McGill Sur. R.U.

C. C. Shumway et al No. 6 Shiner, Henry Brewer Sur. R.U.

C. C. Shumway No. 14 Shiner, S. N. Steinhardt Sur. No. 62. Drlg. 426 ft.

Milam County

Brown Carroll et al No. 1 John Hancock Life Ins. Co., Juan Jose Sur. T.D. 375 ft.; abd.

Nueces County

Awoeb Oil Co. et al No. 1 Minnie Bock, Geo. H. Pauls subd. T.D. 3,828 ft.; perf. csg. 3,814-23 ft.; I.P. 70 B.P.D.; 9/64-in. ck.

Bay-Tex Oil Co. et al No. 1 Dallas Joint Stock Ld. Bnk., Palo Alto gr., Sec. 148. Drlg. sh. 5,961 ft.

Blanco-Buchanan No. 1-C Gandy, Geo. H. Pauls subd. T.D. 3,830 ft.; 7-in. csg. 3,830 ft.; perf. csg. 3,821-26 ft.; rec. 900 ft. drlg. mud and sd.

E. A. Graham et al No. 1 Sam Taylor, D. M. Oliver Sur., Sec. 465. S.D. 6,024 ft.

John Manley et al No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc.

Mills Bennett Prod. Co. No. 1 Poenisch, E. Villareal Sur. T.D. 7,512 ft.

Phillips Pet. Co. No. 1 Gandy, Geo. H. Pauls subd. of Driscoll ranch. R.U.

Reed & Cox No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. S.D. 4,120 ft.

Shield Oil Co. No. 1 Magee, Blk. 10, Driscoll ranch, Geo. Paul subd. 10¾-in. csg. 650 ft.; cg. 5,582 ft.; rec. oil and mud D.S.T. 5,556-82 ft.; drlg. 6,156 ft.

Texas Conservative Oil Co. No. 1 J. E. Humble, Geo. H. Pauls subd., Driscoll ranch. T.D. 6,010 ft.; 5½-in. csg. 5,960 ft.; perf. csg. 5,658-63 ft., tstd. S.W.; perf. csg. 5,657-60 ft.; swbd. 98 per cent S.W., 2 per cent oil; prepare to perf. 5,900 ft.

Refugio County

Humble O. & R. Co. No. 4 Thompson, Cuadrilla Irrg. Sur. Drlg. sh. 1,520 ft.

Phillips Pet. Co. No. 1 Toland, Guadalupe Cobian & Family Sur. Cg. sh. 6,230 ft.

Quintana Pet. Corp. No. 10 Williams, C. E.P.I.&M. Co. Sur. T.D. 6,220 ft.; perf csg. 5,870-80 ft.; flwd. O.&S.W.; tstg.; no report.

San Patricio County

Seaboard Oil Co. No. 1 Blumberg, A.B. &M. Sur. No. 12. 10¾-in. csg. 1,074 ft.; T.D. 6,015 ft.; 5½-in. csg. 4,439 ft.; perf. csg. 4,417-22 ft.; tstd. 900 lb. W.P. on 3-min. D.S.T.; W.O.

Starr County

Herbert Aid No. 1 J. G. Escobas, J. J. Gutierrez Porc. 72. T.D. 1,012 ft.; abd.

Banks, Miller Oil Co. No. 1 McLean, Unit 3, Valle Del Rico Rio Grande subd., J. B. Villareal Porc. 75. Drlg sh. 2,770 ft.

Clopton & Mitchell No. 1 Tijerina, J. A. Falcon Porc. No. 80. T.D. 1,412 ft.; abd.

H. L. Curry No. 3 Tijerina, H.E.&W.T. R.R. Sur. No. 299. S.D. 678 ft.

C. L. Foster No. 1 H. Garza, Juan Salinas, Porc. No. 71. S.D. 100 ft.

Liberty Oil Co. No. 1 Bass, S.K.&K. Sur. No. 71. S.D. 150 ft.

Lynes & Robertson No. 1 Villareal, C.C. S.D.&R.G.N.G.R.R. Sur. No. 241. Loc.

Magnolia Pet. Co. No. 2 Guerra, Santa Cruz gr. Drlg. sh. 4,812 ft.

Travis County

Burns Oil Co. No. 2 Benetsen, Henry Martin Sur. No. 65. T.D. 1,400 ft.; abd.

Victoria County

Carter, Rubsamen et al No. 1 G. W. Vogt, Victoria Townsite Sur. 10¾-in. csg. 481 ft.; T.D. 3,538 ft. sd.

John Mayo No. 1 Voight, 2 mi. south of Victoria. Cg. 3,656 ft.

Renwar Oil Corp. et al No. 1 Johnston, F. Perez Sur. Drlg. sh. 2,757 ft.

Webb County

J. M. Anderson et al No. 1 Frost, C.C.S. D.&R.G.N.G.R.R. Sur. No. 17. Loc.

Bovsen & Jones No. 2 Watkins, San Casimiro gr. Drlg. sh. 1,100 ft.

F. J. Hines No. 1 Bruni, M. T. Tippin Sur. T.D. 3,010 ft.; abd.

F. J. Hynes No. 2 Bruni, Thos. Burtrang Sur. No. 2184. Drlg. sh. 1,465 ft.

Houser & Campbell No. 1 Benavides, R. Benavides Sur. No. 692. 10¾-in. csg. 21 ft.; T.D. 2,686 ft.; abd.

Gordon Rouse No. 1 Withers, G. B. Withers Sur. No. 52. T.D. 1,182 ft.; abd.

Rowan & Hope, Inc., No. 2 Laurel Bros., A. S. Laurel Sur., Blk. 4. T.D. 4,014 ft.; abd.

V. G. Schimmel No. 1 Benavides, B.S.& F. Sur. No. 693. T.D. 2,350 ft., oil sd.; 7-in. csg. 2,350 ft.; perf. csg. 2,339-47 ft.; R.U. to pump.

Tide Water Asso. Oil Co. No. 7 Bruni, Blk. 7, M. Arispe gr. (deep test Bruni field). R.U.

Williamson County

W. O. Caffey No. 1 J. Seggern, Hardy Pace Sur. T.D. 1,176 ft.; abd.

Zapata County

Joe Martinez No. 2 Bruni, J. V. Borego gr. S.D. 355 ft.

WEST TEXAS WILDCATS

Andrews County

Richmond Drlg. Co. No. 1 University, Sec. 25, Blk. 12, Univ. Sur. S.D.O. 5,005 ft.

Brewster County

H. D. Wilcox No. 2 Kokernot, Sec. 23, Blk. C, J. V. Massey Sur. Drlg. 1,460 ft.

Crane County

P. A. Christian No. 1 M. F. Stephenson, Cert. 2044. W. H. Bates Sur. No. 40. D.&A. at 3,345 ft.

Gulf Oil Corp. No. 5 M. B. McKnight, Sec. 1, Blk. 21-B, P.S.L. Sur. Tstg. 4,184 ft.

Crockett County

J. S. Pittman No. 1 Corbett-Humble, Sec. 15, Blk. 2-B, G.C.&S.F. Sur. Drlg. 560 ft.

Steel Dust Oil Co. No. 1 Geo. D. Atwood, Sec. 9, Blk. P.P., T.C.R.R. Sur. S.D.R. 1,194 ft.

Crosby County

Gulf Oil Corp. No. 1-C Swenson, Sec. 95, Blk. 2, H.&G.N. Sur. Fsg. 5,676 ft.

Dickens County

Bond D. Jones No. 1 Ford et al, I.&G.N. Sur. S.D. 3,662 ft.

Humble O. & R. Co. No. 1 Matador Ld. & Cattle Co., Sec. 26, Blk. 1, Shock & Arnold Sur. T.D. 7,074 ft.; drlg. plug 6,925 ft.; P.B. 6,133 ft.; set retainer at 4,996 ft.; S.D.O. at P.B.T.D. of 4,996 ft.

Ector County

Barnes-Conklin & White No. 1 T.&P. Lds., Sec. 28, Blk. 45, T.&P. Sur. S.D. 4,752 ft.

J. D. Bodkins No. 1 H. F. Foster, Sec. 12, Blk. 43, T.&P. Sur. Drlg. wtr. well.

R. H. Gill No. 1 J. E. Parker, Sec. 12, Blk. 45, T.&P. Sur. W.O.R. 145 ft.

Sloan & Zook No. 1 J. L. Johnson, Sec. 34, Blk. 43, T.&P. Sur. P.B. and pull. big pipe 4,161 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel, R.U.S.T.; to P.B. and sdtrk.; T.D. 3,571 ft.; sidetracking hole 1,925 ft.; rng. 5-in. 3,571 ft.

Gaines County

Stanolind O. & G. Co. No. 1 J. B. Rayner, Sec. 3, Blk. 30-C, P.S.L. Sur.; 6,000-ft. test. Rng. 10-in. 235 ft.

Glasscock County

I. R. Petty No. 1 Joe Blake, Sec. 163, Blk. 29, W.&N.W. Sur. Tstg. 1,480 ft.

Shell Pet. Corp. No. 1 A. Neal, Sec. 38, Blk. 33, T.&P. Sur. P.B. 3,125 ft.; S.D.O.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ Sec. 34, Blk. 74, Twp. 6. S.G. 6,340-45 ft.; T.D. 6,402 ft.

Haymon Krupp No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.&P. Sur. Drlg. 5,655 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co., Sec. 151, H.E.&W.T. Sur. S.D.O. 4,450 ft.

McCulloch County

A. E. McMillan No. 1 Nat Randall, A. M. Waldrip Sur., Sec. 146. Loc.

Pecos County

L. Cain No. 1 Masterson-Lehn, Sec. 71, Blk. 10, H.&G.N. Sur. Drlg. 1,685 ft.

Greene & Goodman No. 1 Masterson, Sec. 105, Blk. 10, H.&G.N. Sur. D.&A. at 1,526 ft.

Leidecker & Cain No. 1 M. M. Lehn, Sec. 71, Blk. 10, H.&G.N. Sur. Csg. 1,743 ft.; flwg. 20 B.O.; 24 hr.; tstg. 1,783 ft.

Lloyd-Penn & Hargraves No. 1 H. E. Bonebrake, Sec. 110, Blk. 8, H.&G.N. Sur. Installing new line 640 ft.

Magnolia Pet. Co. No. 2 Abell-Eaton, Sec. 23, Blk. 3, H.&T.C. Sur. T.D. 4,792 ft.; est. top Permian at 4,790 ft.

O. E. Schade No. 1 Otis Garrett, Sec. 59½, Blk. 8, H.&G.N. Sur. Tstg. est. 35 B.O.P.D.; T.D. 2,290 ft.; swbg. est 20 B.O.P.D.; 5 B.W.P.D.; testg. on pmp.; S.D. 2,290 ft.

Superior Oil Co. No. 1 V. W. Crockett, Sec. 7, Blk. 110, T.C.R.R. Sur. C.&P.

Superior Oil Corp. No. 1 V. W. Crockett,

Sec. 5, Blk. 110, T.C.R.R. Comp. 20 B.O.P.D.; T.D. 1,447 ft.

S. Thompson No. 1 Elsinore Cattle Co., Sec. 54, Blk. D, G.C.&S.F. Sur. Rig burned; dropped bailer in hole; S.D.O. 7,342 ft.

J. C. Trees No. 1 fee, Sec. 63, Blk. 3, H.&G.N. Sur. Tstg. on pmp.; est. 5 B. O.P.D. and 5 B.W.P.D.; S.D.O. 2,359 ft.

C. W. Williams No. 1 J. Eaton, Sec. 1, Blk. 203, J. H. Handy Sur. Prep. P.B. to 1,700 ft.

Presidio County

Marfa Oil Co. No. 1 Fischer ranch, Sec. 31, Blk. 8, G.H.&S.A. Sur. M.I.M.

H. D. Wilcox No. 2 Jones-Coffield, Sec 308, Blk. 4, H.&T.C. Sur. S.D.O. 1,840 ft.

Reeves County

Artie Baker No. 1 J. W. Grider, Sec. 31, Blk. 58, P.S.L. Sur. S.D.R. 450 ft.

Forest Development Corp. No. 1 I. E. Scott, Sec. 286, Blk. 13, H.&G.N. Sur. Drlg. below 1,000 ft.

Scurry County

J. B. Stoddard No. 1 R. O. McClure, Sec. 142, Blk. 97, H.&T.C. Sur. C.O. 2,375 ft.

H. C. Wheeler No. 1 M. Sims, Sec. 141, Blk. 97, H.&T.C. Sur. Tstg. 18 B.O. in 17 hrs. 2,509 ft.; comp.; 182 B.O.P.D.

Terrell County

Shirley, Lanham & Blakeney No. 1, Sec. 45, Blk. 2-B, C.C.S.D.&R.G.N.G. Sur.; 2,500-ft. test. S.D. csg. 268 ft.

Tom Green County

Dane Elder No. 1 DeLong, James Webb Sur., Sec. 83. Drlg. 85 ft.

Lynn & Cobb No. 1 I. B. Cox, Val. Mueller Sur. No. 176. S.D. 368 ft.

Dan Short et al No. 1 J. G. Davidson, NW part of Lovie P. Moore Sur. S.D. csg. 2,097 ft.

Southern Cross No. 1 Upton & Upton, Sec. 20, Blk. A, A,B,&M, Sur. U.R. 5,153 ft.

Spinner No. 1 Reed, Mason Ferry Ranch Sur. S.D.O. 5,803 ft.; tools out of hole.

Ward County

Magnolia Pet. Co. No. 1-44 Sealy, Sec. 44, Blk. F, G.M.M.B.&A. Sur. Drlg. 1,950 ft.

Yoakum County

W. A. Hudson No. 1 J. D. Webb, Sec. 545, Gibson Sur. Cmtd. whipstock 4,500 ft.; drlg. 5,225 ft.

Shell Pet. No. 1 Waples-Platter, Sec. 616, Tstg. 5,380 ft.; hole fills at rate of 100 ft. per hr.; making 1 bailer of wtr. per hr.; P.B. 5,312 ft.; pmpg. 145 B.O. P.D., 30 per cent S.W.; tstg. 5,305 ft.

TEXAS PANHANDLE

Armstrong County

Holmes, Newblock & Haley No. 1 Ed Moore, Sec. 319, Blk. 4-B, H.&G.N. Sur. Drlg. in new hole 560 ft.

Castro County

English et al No. 1 Gundlach, NW¼ Sec. 145, Blk. 6-M, S.K.&K. Sur. Loc.

Collingsworth County

Johnson No. 1 Taylor, Sec. 10-17, H.&G. N. Sur. T.A. 875 ft.

Deaf Smith County

Uscan No. 1 Farwell, Sec. 18, Blk. 3, X. Sur. U.R. 5,626 ft.

Gray County

Products O. & G. Co. No. 1 Mason Davis, Sec. 23, Blk. 23-M, H.&G.N. Sur. Loc.

Lipscomb County

Phil O'Neil No. 1 J. Kock, NW SW Sec. 539, Blk. 43, T.&T.C. Sur. S.D. 480 ft.

Roberts County

E. J. Dunigan, Jr., No. 1 Ledrick, Sec. 34, Blk. C, G.&M. Sur. Drlg. 4,150 ft.

Wheeler County

Smith Bros. No. 1 Ribble, Sec. 46, Blk. 5-A, H.&G.N. Sur. S.D. 2,710 ft.

E. C. TEXAS WILDCATS

Anderson County

R. H. Williamson No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. Loc.

Angelina County

Ginter Bros. and Jones No. 6 Copes Hrs., J. Morin Sur., 3 mi. E of Dibol. S.D. 2,190 ft.

Sewell-Murphy No. 1 Long Bell Lbr. Co., H.&B. Sur., 3 mi. E of Zavalla. S.D. 500 ft.

Ellis County

C. M. Beckner et al No. 1 H. A. Styles. A. Bullock Sur., 3½ mi. W of Maypearl. S.D. 660 ft.

Compton Oil Co. No. 1 M. L. Van Landingham, O. Wheeler Sur., 3 mi. E of Pluto. Drlg. 890 ft.

Falls County

M. A. Hayes No. 1 D. G. Wooten, J. Powell Sur., 8 mi. SE of Zott. S.D. 1,854 ft.

Jack Shaunfield No. 1 Bargonier, J. M. Graham Sur., SE of Chilton. Drlg. 1,050 ft.

Fannin County

H. W. English No. 1 T. W. Ayers, J. D. Seales Sur. S.D. 505 ft.

Freestone County

Brothers Oil Co. No. 1 P. D. C. Ball, M. Rionda Sur., 5 mi. NW of Butler. Loc.

W. H. Keeling No. 1 Bounds-Longbotham, R. B. Longbotham Sur. S.D. 30 ft.

Grayson County

John Grey No. 1 Freedman, W. S. Reeves Sur., 8 mi. NW of Denison. O.S. 1,357-59 ft.; S.D. 1,381 ft.; S.O.; tstd. S.W.; S.D.; W.O. 1,407 ft.

Jim McMurrey No. 1 Dr. T. J. Long, J. Garland Sur., 2 mi. S of Collinsville; 4,000-ft. test. S.D.O. 3,929 ft.

Prince Bros. No. 1 Williams, S. Nix Sur., 2 mi. NE of Van Alystine. S.D. 1,173 ft.

Ross & Marshall No. 1 J. N. Taylor, W. Moore Sur., 8½ mi. NW of Denison.

Sinclair Prairie Oil Co. No. 1 M. Williams, R. H. Sowell Sur., 1 mi. SW of Collinsville. D.&A. 4,543 ft.

Henderson County

Richards & Holloway, Inc., No. 1 G. E. Murphy, J. M. Gardner Sur., 6 mi. SW of Mabank. T.D. 3,159 ft.; S.I. storage.

Scrivner et al No. 1 A.L.S. & F. Co., J.M. Saly Sur., 6 mi. SW of Athens. Drlg. 2,478 ft.

Tide Water-Seaboard-Humble No. 1 Lewis, J. K. Stokes Sur., 1 mi. N of Opelika. D.&A. 8,465 ft.

Tide Water-Seaboard-Humble No. 1 Scott, C. Robb Sur., 3 mi. SW of Opelika area. D.&A. 8,972 ft.

Hill County

A. V. Abernathy and L. N. Sanders No. 1 E. M. Farrell, M. Mata Sur., ¼ mi. NE of Mt. Calm. S.D. 935 ft.

Hopkins County

O. P. Vaughn No. 1 H. W. France, J. B. Hill Sur., 2 mi. N of Sulphur Bluff. Drlg. 270 ft.

Houston County

G. C. Dixon No. 1 W. Goodman, J. J. Thomas Sur., ¾ mi. E of Lovelady. Drlg. 2,280 ft.

Kaufman County

Sam Knoerr No. 1 J. B. Hunter, P. Walker Sur., 5 mi. S of Trenton. S.D. 3,006 ft.

McGee No. 1 San Antonio Land & Cattle Co., E. Higdon Sur. Cg. 3,020 ft.

W. G. McGee No. 1 General American Life Ins. Co., John Baker Sur., 6 mi. W of Mabank. T.S. 3,070 ft.; S.O.; bailing 3,093 ft.; S.D. 3,093 ft.

Tyler & Smith No. 1 Trinity farms, G. Crocher Sur., 3½ mi. SW of Mabank. Drk.

Leon County

Humble O. & R. Co. No. 1 W. Johnson, W. Little Sur., outpost to Humble-Harris area. T.D. 5,904 ft.; made S.W.; set whpstk. 5,766 ft.; drlg. 5,850 ft.

Limestone County

Albert Baggett No. 1 J. L. Thompson, P. Varela Sur. S.D. 15 ft.

Zephyr Oil Co. No. 2 Peeples, R. Scott Sur., 2 mi. SW of Tehucanna. T.D. 2,594 ft.

McLennan County

M. M. Russell No. 1 J. B. Lindsey, G. H. Robertson Sur., NW of Waco Lake. Loc.

Nacogdoches County

D. McDaniels No. 1 T. H. Seale, J. A. Cherino Sur., just outside of city limits of Cherino. S.D. 750 ft.

Navarro County

Topaz Oil Co. No. 1 E. Trammel, R. Mathews Sur., 4 mi. NE of Bazzett. Plts.

Rains County

McKinley & Hastings No. 1 McTaggart, B. Milder Sur., 1 mi. W of Emory. S.D. 720 ft.

Red River County

Kansas-Oklahoma Pet. Corp. No. 1 R. H. Ringwald, A. Moore Sur., 3 mi. W of Manchester. S.D.O. 450 ft.

Robertson County

J. E. Cox No. 1 Sandifer, H. Henry Sur., 3½ mi. SE of Franklin. Loc.

Rusk County

Golden Rod Drlg. Co. No. 1 Hall Wood, J. I. Sanches Sur., 1½ mi. NW of Salem. Drlg. 4,215 ft.

Hamm & Bogges No. 1 W. G. Ross, J. McCune Sur., 3 mi. NW of Mount Enterprise. S.D. 3,836 ft.

Smith County

O. L. Ross No. 1 W. P. Rushing, J. Herrin Sur., 1 mi. E of Whitehouse. Drk.

J. H. Thomason No. 1 J. W. Bartlett, R. H. Stewart Sur., ½ mi. SE of Jamestown. S.D. 2,004 ft.

Titus County

Superior Oil Co. No. 1 John Hargraves, S. B. Patton Sur., 8 mi. S of Mt. Pleasant. S.D. 4,200 ft.

Trinity County

McApline No. 1 C. V. Dilley, J. Grissett Sur., 7 mi. N of Trinity. S.D. 2,340 ft.

Van Zandt County

F. A. Richardson No. 1-A B. C. Dodd, T. W. Hutchinson Sur., 2 mi. S of Grand Saline. Swbd. dry, no show 4,968 ft.

NORTH TEXAS WILDCATS

Archer County

Deep Oil & Griffin No. 3 Waggoner, Sec. 1, H.&T.C. Sur., Blk. 4. L.S.O. 4,875-79 ft.; coring.

G. E. Kadane & Sons No. 1 J. Hemmi, Sec. 60, Clark & Plumb Sur., Blk. 3. T.D. 5,314 ft.; 6⅝-in. 5,150 ft.; S.L. 5,-174-5,220 ft.; retreated 10,000 gal. acd.; C.O.; tstg. on pmp.

Baylor County

British Am. O. P. Co. No. 1 F. C. Green "L," Sec. 8, H.T.&B. Sur. 6⅝-in. 3,130 ft.; perf. 3,060-65 ft.; S.O.&G.; tstg. after perf.; est. 25 B.P.D.; S.D.O.

Clay County

L. T. Burns No. 1 E. F. Calloway, Lot 9, Hopkins Co. Sch. Ld. S.D. wtr., 2,010 ft.

L. T. Burns No. 1 J. T. Pickett, W. W. Yearly A-745. Drlg. 3,505 ft.

Consolidated Oil Co. No. 1 A. H. Bevering, Sec. 9, B.B.B.&C. A-69 Sur. Loc.

J. E. Farrell No. 1 C. P. Malone, Sec. 12, T.&N.O. Sur. A-828. S.D.O. 5,550 ft.

Frabar-Hodges and Mid-Union Drlg. Co. No. 1 Mrs. R. C. Kinder, Lot 11, Clark & Plumb Sur., Blk. 2. S.S.O. 5,273-80 ft.; drlg. 5,527 ft.

E. C. Norwood et al No. 1 H. C. Shipley, Sec. 29, Madison Co. Sch. Ld. A-302 Sur. Drlg. 675 ft.

Staley Oil Co. No. 1 D. J. Percifield, Sec. 37, Belcher Sub. Spud. and S.D., wtr.

Youngblood & Foree No. 1 Mrs. Ida Wynn, Sec. 2, T.&.N.O. Sur. A-795. Drlg. 2,738 ft.

Cooke County

Sinclair Prairie No. 10 J. M. Best, T. Toby Sur. A-1054. T.D. 5,643 ft.; P.B. 5,565 ft.; set 5½-in. 5,285 ft.; drld. plug and filled up 2,005 ft.; swbg. and C.O.

Target Drlg. Co. No. 1 Honeycutt, Sec. 4, Univ. Lge. No. 8. Drlg. 1,255 ft.

Hardeman County

Amerada Pet. Corp. No. 1 W. M. Rice, Sec. 81, W.&N.W. Sur. Drlg. 2,595 ft.

M. M. Cooke No. 1 Mrs. M. D. Norton, Sec. 3, E.L.R.R. Sur. Spud and S.D.

Jack County

Samuel Edelman No. 1 A. B. Griffith, S. Tollett A-1436. Spd. and S.D.

Montague County

E. B. Madden No. 1 Smith, H. N. Baker A-49 Sur. Drlg. 3,472 ft.

Sinclair Prairie Oil Co. No. 1 Whaley, Sec. 16, B.B.B.&C. A-86. Sur. Drlg. 5,310 ft.

Wichita County

Hanlon-Buchanan, Inc., No. 1 Fassett & Tuttle "F," D.L.&C. Sur. A-596. 6⅝-in. 4,040 ft.; L.&O.S. 4,061-92 ft.; shot 155 qt.; tstg. est. 100 bbl.; C.O.; tstg.

Wilbarger County

Consolidated O. Co. No. 1 Wagoner CC, Sec. 36, H.&T.C. Sur., Blk. 6. Drlg. 3,915 ft.

Lawson & Leavell No. 16 W. T. Waggoner A, Sec. 109, H.&T.C. Sur., Blk. 14; 3,500-ft. test. S.D.O. 1,445 ft.

Young County

Hull & Silk No. 1 H. N. Tucker, Sec. 180, T.E.&L. Sur. S.D.O. 5,018 ft.

WEST CENTRAL TEXAS DISTRICT

Brown County

T. W. Allmon No. 1 Almeda Moore, Jesse Williams Sur. No. 144, Abst. 931. S.D.O. 1,375 ft.

A. J. Bartrug No. 1 J. Blokom, Sec. 23, B.B.B.&C. Sur. Drlg. 1,100 ft.

J. L. Derrich No. 1 C. V. Harris, Sec. 617, Prosper Mangle Sur. Drlg. 90 ft.

Dan Hartzell No. 1 H. D. Browning, Blk. 31, Chas. Messer Sur. No. 127. Fsg. tools 807 ft.

Lynn No. 1 Nesbitt Rice, M.E.P.&P. Sur., Blk. 25. Drlg. 1,100 ft.

Plains Prod. Co. No. 1 M. L. Graves, G. Armstrong Sur. No. 41. Loc.

Western Well Service Co. No. 1 T. M. Hays, C. B. Banister Sur. Drlg. 760 ft.

Callahan County

Bayou Oil Co. No. 1 W. E. Jones, Sec. 84, Comal Co. Sch. Ld. Sur. Loc.

J. W. Dobbs Oil Corp. No. 2 Finley, Sec. 75, Bayland Orphans Home Lds. Skd. rig 50 ft.; U.R. from 902 ft.; T.D. 1,075 ft.

S. Herndon No. 1 W. L. Toland, Sec. 27, Blk. 5, S.P.R.R. Sur. S.D.O. 1,190 ft.

D. B. McCall No. 1 J. E. Woods, Sec. 127, Univ. Lds., Abst. 14. S.D.O. 2,-229 ft.

T. Whittmer No. 1 I. N. Jackson, Sec. 15, E.T.R.R. Sur. Rng. csg. 1,123 ft.; S.S.O.

Coleman County

Anzac Oil Corp. No. 5-C J. P. Morris, David Breeding Sur. Drlg. 575 ft.

Cooper Oil Co. No. 1 J. P. McCord, Sec. 519, San Augustine Sur. Loc.

Concho County

L. G. Byerley No. 1 Mrs. G. Nayes, NW part of Sec. 1402, Abst. No. 98. Drlg. 364 ft.

Clymore Co., Inc., No. 1 Hill, J. Frederick Sur. P.B. 2,000 ft.; D.&A.; (depth unreported).

Floyd Dodson No. 1 Robert Wilson, Thomas Green Sur. Mch.

National Resources No. 1 Armon, Sec. 105, Blk. 72, T.&N.O. Sur. S.D.R. 700 ft.

Eastland County

Aloco Oil Co. No. 1 J. W. Guy, Sec. 32, Blk. 1, H.T.C. Sur. D.&A. at 1,601 ft.

R. R. Groce No. 1 J. M. Rush, Sec. 130, Blk. 3, H.&T.C. Sur. Rng. 8 in. 515 ft.

W. T. Luton No. 1 R. Been, Sec. 13, Blk. 3, H.&T.C. Sur. S.D. 258 ft.

W. R. Ritchey No. 1 Weddington, Sec. 2054, T.E.&L. Sur. Rng. csg. 3,462 ft.

W. A. Stiles No. 1 J. Lyerla, SE part of Ussury Sur. No. 20. U.R. 1,455 ft.; T.D.

Erath County

Wayne Chandler No. 1 Chandler, J. W. Moore Sur., Abst. 571. Fsg. 4,678 ft.

T. Gray No. 1 C. Young Hrs., NW cor. of Stephen Smith Sur., Abst. 682. Sp. and S.D.

T. G. Jackson No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. Machinery.

Fisher County

Frank Bennett No. 1-A Martin, Sec. 113, Blk. 1, H.&T.C. Sur. D.&A. at 3,902 ft.

Hamilton County

Wallace & Vickers No. 1 C. C. Lund, J. P. Bailey Sur. 51. C.O. 3,431 ft.

Haskell County

E. W. Marland No. 1 Cobb, Sec. 96, Blk. 1, H.&T.C. Sur. S.D.R. 2,703 ft.

Jones County

Bradford & Robertson No. 1 S. A. Beaty, SE part of Section 21, Blk 4, H.&T.C. Sur. Drlg. 1,895 ft.

J. L. Douglas No. 1 J. M. Blanton, SW cor. of S. L. Underwood Sur. No. 1. Drlg. 1,610 ft.; no report.

Ed. L. Evans No. 1 B. J. Crier, Sec. 8, B.A.L. Sur. S.D.O. 1,721 ft.; est. 10 B. O.P.D.; installing pump 1,721 ft.; S.D. O. 1,721 ft.

Fain-McGaha Oil Corp. No. 1 Ferguson, Sec. 36, Blk. 15, T.&P. Sur. Loc.

Fain-McGaha Oil No. 1 J. H. Harris, Blk. 79, DeWitt C.S.L. Sur., 5 mi. W. of Akard pool. Fsg. 2,470 ft.

Gillespie et al No. 1 J. D. Samples, Sec. 45, Deaf and Dumb Asylum Lds. Drlg. 3,441 ft.

Noark et al No. 1 D. Southard, Sec. 8, D.&D.A. Sur., 2 mi. NW of Griffin pool. Drlg. 2,870 ft.

Phillips Pet. Co. No. 1 J. R. Montgomery, Sec. 5, Blk. 16, T.&P. Sur. S.D.R. 2,632 ft.

Quality Prod. No. 1 Radford, SE¼ Sec. 20, Blk. 16, T.&P. Sur. Fsg. bit 1,800 ft.

S. B. Roberts Co. No. 1 C. Herndon, Sec. 6. M.E.P.&P. Sur., 2 mi. S of Anson. U.R. from 2,047 ft. to 2,240 ft.

Shaheen & Keeler No. 1 Radford, between Sayles and Akard pools. S.D.; H.F.W. 2,321 ft.

A. H. Tarver No. 1 A. S. Barkley, Sec. 54, Deaf and Dumb Asyl. Lds. Drlg. 3,851 ft.

Mills County

D. Lane No. 1 J. W. Spinks, J. Douglas Sur. No. 5. S.D.R. 450 ft.

Nolan County

Green & Owens No. 1 Tipton, Sec. 43, Blk. 19, T.&P. Sur. Drlg. by csg. at 3,030 ft.

Plymouth Oil Co. No. 1 F. M. McClure, Sec. 49, Blk. 23, T.&P. Sur., 8,000-ft. test. M.I.M.

Palo Pinto County

W. K. Gordon No. 1 W. R. Ringe, Sec. 81, Blk. 2, T.&P. Sur. Loc.

Palo Pinto O. & G. Co. No. 1 A. P. Wilbar, Blk. 59, Burleson C.S.L. Drlg. 2,025 ft.

Shackelford County

Beams Drlg. Co. No. 1 Jackson, Sec. 85, Blk. 12, T.&P. Sur. S.D.O. 1,215 ft.

C. R. Schuster No. 1 L. E. DeWitt, Blk. 56, Univ. Lds. Sp. and S.D.

Stephens County

Geo. E. Fagg No. 1 Richardson, Sec. 5, Blk. 31, S.P.R.R. Sur.; 4,000-ft. test. Loc.

Falcon Co. No. 1 B. T. Hopper, Sec. 1142, T.E.&L. Sur. D.&A. at 3,815 ft.

Lone Star Gas Co. No. 1 O'Conner. Drlg. 3,440 ft.

A. G. Swanson No. 1 Veale-Frost, Sec. 37, Blk. 8, T.&P. Sur. S.D. 927 ft.

Whittmer O. & G. Co. No. 1 Loving, Sec. 66, B.A.L. Sur.; Ellenburger test to 4,500 ft. Drlg. 2,850 ft.

Taylor County

F. H. Brock No. 1 L. E. Tipton, Sec. 20, Blk. 18, T.&P. Sur. Sp. and S.D.

EAST TEXAS

(Border Counties)

Cass County

Red Iron Drlg. Co. No. 1 N. S. Spearman, Samuel Burnham Sur. D.&A. at 3,812 ft.

Harrison County

Ark. La. Gas Co. No. 1-B Abney, J. J. Blair Sur. T.D. 5,646 ft.; 32,000,000 cu. ft. gas; comp.

Marion County—Other

M. D. Fitzwater No. 1 Mrs. Mary Duncan, Jesse Fitzgerald Sur. R.U. to resume drlg., 750 ft.; no report.

Personal Paragraphs

GORDON WATSON, district land man in Kansas for Cities Service Oil Co., is seriously ill at Wichita.

G. H. JETT, accounting department, Texas Co., has been transferred from the Tulsa offices to Salem, Ill.

C. L. MORGAN, geologist for Lion Oil Refining Co. in Shreveport, La., has been transferred to Tyler, Tex., the company's Shreveport office having been closed.

HOMER PIERSON, who has been in charge of the Refugio deputy supervisor's office of the Texas Railroad Commission, has been transferred to San Antonio, changing with W. P. LAUGHTER.

JACK TIMMINS, member of the legal department of Sun Oil Co., Dallas, Tex., has left with his family for a vacation trip to Mexico City.

WALLACE E. PRATT, New York, director of the Standard Oil Co. of New Jersey, is on a trip through the Southwest. He returned in June from a trip to Brazil on company business.

HARRY BALDWIN, San Angelo, Tex., oil man, accompanied by Mrs. Baldwin, their son Larry, and daughters Betty and Marie, has returned from a two weeks' automobile trip to points in Louisiana and Mississippi.

T. L. WYNNE, president of Liberty Oil Co., Dallas, Tex., is principal owner of Southport Petroleum Corp., which has been chartered to take over a controlling interest in Southport Petroleum Co., including the refinery in Texas City, Tex.

DICK ANDRADE, independent operator, and DAN ROGERS, banker and oil man, both of Dallas, Tex., and T. E. McARDLE, Shreveport, La., operator, have formed the Mar Marketing Corp., a pipe line concern with headquarters in Corpus Christi. The three men own a refinery on the ship channel there.

JOHN HART, for the past 3 years on the staff of the Texas Railroad Commission office in Midland, Tex., will leave soon for Eastland where he will become deputy supervisor of the new branch commission office to be opened there. The Eastland office will be a branch of the Abilene office where SIM O'NEAL is in charge.

DR. J. C. KARCHER, president of Coronado Oil Co.; JOHN COWDEN, of Clark & Cowden, and CHARLIE LESTER, of Lester & Duffield, all of Dallas, Tex., made up a fishing party which left Dallas last week-end for the Gulf Coast.

J. SAYLES LEACH has been placed in charge of the Houston, Tex., office of Texas Co., succeeding T. J. DONOGHUE, who recently retired after 38 years' service in the company. Mr. Leach joined the company in 1917 as a bookkeeper.

BOB WHITE has completed a 25,000-mile inspection trip for Standard-Vacuum Oil Co. through British India and Ceylon and is now in Calcutta. The trip brings the total mileage of Mr. White's studies for the company in the Far East to almost 60,000.

ED HARMAN, of Seaboard Oil Corp., Dallas, Tex., left last week for some stream and lake fishing in the Ozark Mountains of Missouri.

MYRON M. KINLEY, CLEO JOBE and CHARLES HENGST are on their way to Arabia to extinguish a burning well of Standard Oil Co. of California. They are traveling aboard a Clipper plane to Marseilles and thence by Imperial Airways.

JAMES D. HANCOCK, Dallas, Tex., oil man, and his two sons, James, Jr., and John L., together with R. B. GEORGE and L. B. PRUITT, both of Dallas, have organized the Swan Oil Corp., which will operate mainly in Crane and Upton counties in West Texas.

JOHN GALLEY, geologist for Shell Oil Co., Inc., in Tulsa, has been named division geologist with headquarters in Wichita, Kans. He will assume his new post about August 1, succeeding LESLIE M. CLARK, who has been transferred to the Centralia, Ill., division.

RAYMOND L. TOLLETT, formerly with the Wrightsman Oil Co., Fort Worth, Tex., is the new secretary-treasurer of Cosden Petroleum Corp., Fort Worth. Mr. Tollett succeeds J. W. LANE, who resigned to become secretary-treasurer of Motor Fuels, Inc., a Fort Worth organization operating in West Texas.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The High Court of Justice in England has ordered the affairs of the Diesel Oil Engine Co. wound up. Dr. Rudolf Diesel, inventor, disappeared from a transatlantic liner in 1913 and is believed to have drowned himself because of business troubles.

The Royal Dutch-Shell interests are constructing a 5,000,000-bbl. oil reservoir at Martinez, Calif. A big refinery at that point will draw its supply from the reservoir.

Anglo Persian Oil Co. places an order with the National Tube Co. for 15,700 tons of line pipe, or equal to 106 miles.

20 YEARS AGO

The story is told of Nels Esperson, multi-millionaire Texas oil man, that in his youth he came to America as a sailor before the mast, went ashore at Galveston, Tex., bought a bunch of grapes, the first he had ever tasted, and decided that a country that could raise such delicious fruit was a good one to live in. So he started being an American.

The Prairie Pipe Line Co. lines are overtaxed and the company has made a deal with the Yarhola Pipe Line Co. (Royal Dutch-Shell) to ship 1,000,000 bbl. from Cushing, Okla., to Wood River, Ill.

10 YEARS AGO

The Texas Co. opens the Darst Creek pool in Guadalupe County, Texas, with a well swabbing 52 bbl. per hour.

A 1,500-bbl. well in the new Jal field in Lea County, and a showing of oil and gas 9 miles north of the field are encouraging signs for southeastern New Mexico.

The first 6 months of 1929 saw all initial production records for the period broken with a total of 3,265,396 bbl. from 7,002 oil wells, an average of 466.35 bbls. per well.

HUGO KAMB, geologist for Arkansas Fuel Oil Co. in Shreveport, La., is on vacation in Minnesota with his family.

PRESTON G. NORTHRUP, of Northrup & Carr, San Angelo, Tex., oil firm, has returned from a 2 weeks' fishing trip at Rainbow Trout Lodge in Colorado.

JOHN S. McDERMOTT, secretary to M. B. SWEENEY, executive general manager of Sun Oil Co., Dallas, Tex., left last week with his family for a motor trip to Mexico City.

RUSSELL R. BUCKHAM, chief chemist for James B. Berry Sons Co., Inc., Oil City, Pa., has resigned to become vocational instructor in oil and natural gas classes at the Oil City High School.

JOHN L. LANGSTON, chief scout for Sun Oil Co., Dallas, Tex., with Mrs. Langston and their daughter, Barbara Jo, left last week for a vacation trip to Galveston, New Orleans, Florida, and other points along the Gulf Coast.

A. B. COBB of Cut Bank, Mont., independent oil producer, has purchased an airplane and it is reported that EARL VANCE will pilot the plane for Mr. Cobb on his trips, largely between his Wyoming and Montana operations.

GAY HAMMOND, head of Hammond Oil Co., Fort Worth, Tex., an independent producing firm, was a business visitor in New York last week. Mr. Hammond flew his own plane as far as Pottsville, Pa., where it was left for an overhaul.

W. D. EVES, with offices at headquarters of the Shell Oil Co. in London, England, is in Los Angeles, Calif., on a business visit.

J. NOORDUJAN, managing director of Asiatic Petroleum Co. in Curacao, Dutch West Indies, sailed from New York last week aboard the Santa Paula, returning to his headquarters.

BRIAN BEREY PARRY, assistant manager of Compania de Petroleo Shell de Colombia, has terminated a visit in the United States and returned with Mrs. Parry, to Bogota, where he maintains headquarters.

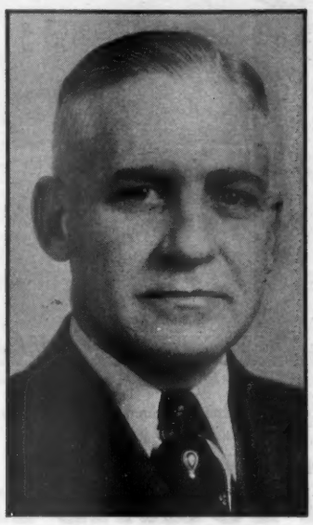
H. S. SANDERS has been elected treasurer of Union Oil Co. of California, succeeding J. M. RUST, who retired. Mr. Sanders joined the company in April 1926 and was elected an assistant treasurer in August 1934.

GEORGE PIERCE and Mrs. Pierce, of Oklahoma City, are preparing for a honeymoon trip after 40 years of waiting. They lived on a 20-acre tract of land and made a modest living gardening. With the discovery of oil their land was thrown into litigation over the petroleum rights. The case has been settled by the Glidden Oil Corp., of Tulsa, which paid $201,000 to the Pierce family for the land.

COMDR. WILLIAM G. GREENMAN, inspector of naval petroleum reserves in California for the past two years, has been succeeded by LT. COMDR. WENTWORTH H. OSGOOD. The latter graduated from the U. S. Naval Academy in 1912 and later acquired a degree in petroleum engineering at the University of Pittsburgh. His post is an important one because Congress has given the Navy permission to trade or condemn properties deemed necessary to form the nucleus of a naval reserve.

Desk Space and a Man

When E. R. Turner, recently elected vice president of Pan American Production Co., Houston, Tex., was sent to that city in July, 1935, to take charge of the company's operations (it had been formed just a month before) its facilities consisted of desk space and a newly employed geologist. Mr. Turner, as general manager, had extremely simple instructions, to wit, to build an organization and get production. He did both, and today the company has efficient production, land, and geological departments. And it has producing properties in coastal Louisiana and South Texas. Also it holds extensive acreage with favorable potentialities. There was organized too Pan American Pipe Line Co., which has built pipe lines out of the Hastings and South Houston fields and recently acquired the gathering system in the Cayuga field.



E. R. TURNER

Mr. Turner, who was born in Madisonville, Tex., started his career in the oil business when he got a job in the comptroller's department of the Texas Co. in Houston in 1914. Shifts and promotions gave him varied experience, but since 1922 he has been continuously in the producing division, except for time out in the World War, when he served as a captain of field artillery. In 1929 Dan J. Moran, vice president of the Texas Corp., was made president of the reorganized Continental Oil Co. Mr. Turner went with him and became assistant to the vice president, in charge of drilling and production. This was the post he held at the time he joined Pan American.

GROVER CONRAD, president of Oil Well Drilling Co., Dallas, Tex., left with his family for a vacation trip to California.

DR. J. A. L. HENDERSON, London, vice chairman of the board of directors of New Brunswick Gas & Oilfields, Ltd., has arrived in Moncton, N. B., and expects to remain in Canada about 6 months.

R. C. JOPLING, vice president of Phillips Petroleum Co., with offices in Bartlesville, Okla., accompanied by Mrs. Jopling and their son R. C., Jr., are spending a vacation in California, having arrived in Los Angeles a few days ago.

WALTER K. FRANKLIN, formerly research engineer in Shell's motor laboratory at its Martinez, Calif., refinery, has been appointed engineer at the company's Wilmington refinery and has moved from the San Francisco Bay region to Los Angeles.

J. C. BRADLEY, formerly with Winkler-Koch Engineering Co. in Ploesti, Rumania, has been made superintendent of the Cyril, Okla., plant of Anderson-Prichard Refining Co. Mr. Bradley at one time was safety engineer at McPherson, Kans., for Globe Oil & Refining Co.

W. L. STEWART, JR., vice president of Union Oil Co. of California, commanding his 67-ft. yawl Chubasco, and EDWIN PAULEY, president of Petrol Corp., with his 84-ft. schooner Fandango, are now the principal contenders in the transpacific yacht race from Treasure Island, in San Francisco Bay, to Honolulu. The contest was reported at the week-end to have settled down to a two-boat race, with not more than 9 miles separating the contenders. Although both men are in the oil business, the only oil either can use is lubricating oil.

J. W. COLLINS, who has been buying leases in the Forest City basin of Kansas and Missouri for Phillips Petroleum Co. since last January, has been transferred to the land department of the company and will have headquarters in Amarillo, Tex.

SHIFTS: H. E. PURDUM, toolpusher J. A. English Oil Development Co., from Glendale, Calif., to Fillmore, Calif.; J. R. SHAW, chemist Gulf Oil Corp., from Longview, Tex., to Port Arthur, Tex.; E. C. HEIDRICH, JR., manager Black-Knight Oil Co., from Peoria, Ill., to North Point, Mich.; FINLEY DOYLE, geologist Sun Oil Co., from Evansville, Ind., to Morganfield, Ky.; T. W. WHEELER, geologist Phillips Petroleum Co., from Bartlesville, Okla., to Girdler & Wheeler Exploration Co., Houston, Tex.; C. L. MAYHALL, director Anderson-Prichard Oil Corp., from Oklahoma City, Okla., to Brainerd, Minn.; IVAN J. FENN, geologist Subterrex Co., from Decatur, Ill., to Taylorville, Ill.; W. I. INGHAM, geologist Mid-Continent Petroleum Corp., from Russellville, Ky., to Morgantown, Ky.; HERBERT M. DAWSON, Petty Seismic Party, from Maracaibo, Venezuela, South America, to Cucuta, Colombia, South America; EDWIN MEREDITH, Meredith Oil Co., from Saginaw, Mich., to Grand Rapids, Mich.; F. C. HENDERSON, president Henderson Co., from New York to Skytop, Pa.

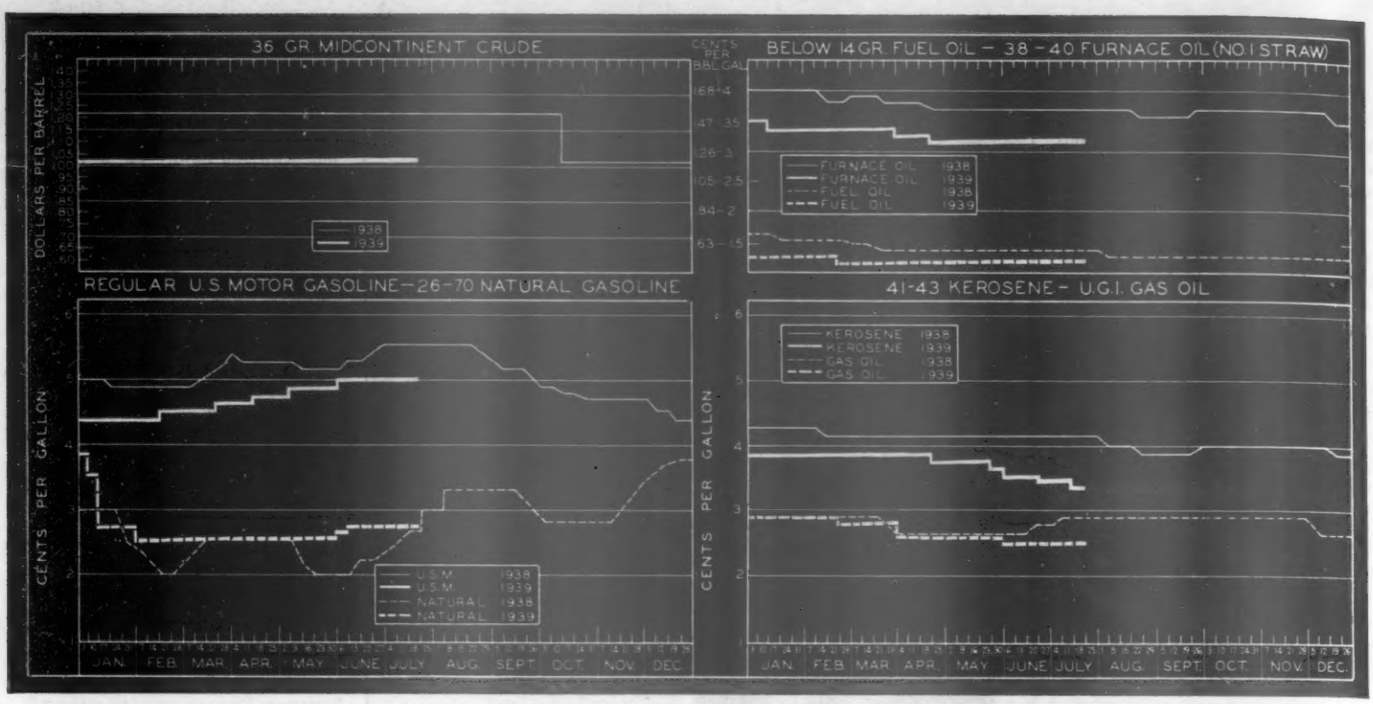
H. W. NEWELL, a recent graduate of Harvard University, is now assistant to A. E. OLDHAM, chief geologist of American Liberty Oil Co., Dallas, Tex.

CHARLES C. BROWN, former Oklahoma State tax commissioner and at one time general superintendent of the Marland Oil Co., recently visited Baltimore, Md.

PROF. JOHN F. DODGE, University of Southern California, has been appointed technical assistant to direct the work of nine petroleum technologists in a program of consolidating California oil deposits to assure adequate reserves for the United States fleet in case of emergency. The naming of Professor Dodge was announced by REAR ADMIRAL STUART, director of naval petroleum reserves.

H. A. HUMPHREY, M.Inst.C.E., M.I.Mech.E., M.I.E.E., F.Inst.F., late consulting engineer to Imperial Chemical Industries, has been awarded the Melchett Medal of the Institute of Fuel for 1939 for the work he had done in the development of fuel and appliances in connection therewith. Mr. Humphrey will deliver the Melchett Lecture on October 19.

L. C. MARCELL headed a party of officials of the White Eagle Division of the Socony-Vacuum Oil Co. on their first official tour of inspection of company properties and interests in Montana since the start of construction of the Socony-Vacuum unit of the Glacier Production Co. refinery at Cut Bank. In the party are MRS. MARCELL, R. R. IRWIN, R. D. MERING, and C. A. LEWERS. Mr. Marcell was chairman of the board of White Eagle corporation and is now general manager of the western division of Socony-Vacuum. Mr. Irwin, formerly president of White Eagle, is assistant general manager and manager of manufacturing and transportation. Mr. Mering is director of sales, and Mr. Lewers is assistant director of sales in White Eagle Division.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Gasoline Demand Mounts in Group 3 Area, but Prices Fail to Respond

By T. F. SMILEY

Sentiment in the Group 3 gasoline market was faintly improved this week, not because profitable business was in sight, but because everybody was busy taking care of orders. Demand was as vigorous as the most enthusiastic forecasters had predicted. Refiners who had been looking for buyers a week earlier reported they were sold out. Surface appearances indicated business was at high tide. And it was too, so far as volume was concerned. But refiners who cling to the old-fashioned notion that sound business procedure requires a little something in the way of profits declared most of the bustling activity in the gasoline trade was without significance in the treasurer's office.

Demand Fails to Lift Prices

Although the heaviest demand for gasoline in refinery history will be recorded in the weeks immediately ahead, prices received for it barely cover the cost of manufacture. And few, if any, refiners were predicting advances in prices. Five cents a gallon for regular-grade gasoline is commonly accepted as the break-even point for Oklahoma refiners. It is a matter of common knowledge that much of the material changing hands in the Group 3 spot market is not bringing that price, and the conclusion is inevitable that some of the gasoline shipped from refineries represents actual loss.

The fact that the nation's gasoline stocks continue at a higher level than they recorded in the corresponding period of 1938 exerts a depressing influence on the market. So does the fact that refinery crude runs have been much higher since mid-April than they were last year. In the week ending July 8 runs to stills were about 200,000 bbl. higher daily than they were in the comparable week of 1938.

However, there is ground for belief that refiners, recognizing the disordered market conditions that have developed, are beginning to curb their plant operations. In the Mid-Continent and Gulf Coast areas stocks are believed to be in a healthier condition than they were on July 1. Offerings by Mid-Continent refiners have become less urgent and a survey late last week indicated that not more than five unsold cargoes of gasoline were in the hands of Gulf Coast nonintegrated refiners, as contrasted with twice that many reported a few weeks ago.

Steadily increasing demand is expected to be witnessed as the vacation season moves to its height, and refiners who habitually look on the bright side of things express the hope that even though ruling prices do not advance, concessions from them demanded by buyers will be less severe.

Natural gasoline was maintaining its firm market. Some of the large refiners are buying all they can take care of, presumably in anticipation of higher prices soon. Export business was making substantial drafts on supplies. Manufacturers without stabilization facilities have been meeting no difficulty in getting rid of their 26-70 material, though most of the business now is in the 18- to 20-lb.

Asking for Better Motor Fuels

Rising demand for motor oils is attending the vacation season and the increased use of the family car for pleasure driving, but it is bringing no better prices for lubricants in the Mid-Continent territory. A hopeful sign is seen, however, in the growing requests for high-grade products. A steadily lessening call for cheap, nondescript lubricating oils is reported even among owners of old cars. One large Mid-Continent manufacturer of motor oils said that of the total sold by his company before the depression got under way 9 years ago 93 per cent was classified as first grade and 7 per cent second grade. Demand for the first-grade material dropped to 42 per cent. With the upturn in general business the demand for the higher-quality motor oils now represents 87 per cent of the total, and it continues to rise.

Light fuels, kerosene, and tractor fuels were slow. Wax was firm.

Refined Oil Market Barometer

Big gains in gasoline consumption reported, with some evidence that tankcar prices may be pulled up, especially on Atlantic Coast. Most observers see little likelihood of price advances of consequence unless there is sharp curtailment of plant operations and a much more substantial decline in stocks. Light fuels dull, but more interest manifested. Natural gasolines firm.

MID-CONTINENT. Gasoline active. Naturals steady. Light fuels listless. Wax firm.

EAST COAST. Gasoline less steady, but improvement seen. Kerosene in better position.

GULF COAST. Less distress gasoline and prices firm. Other products steady.

CALIFORNIA. Gasoline lower. Diesel and burning oils weak. Market generally soft.

PENNSYLVANIA. Gasoline fairly steady. Kerosene soft. Bright stocks and neutrals holding.

CHICAGO. Gasoline irregular. Kerosene weak. Light fuels soft. Heavy fuels steady.

High Consumption of Gasoline Feature of Eastern Markets

By H. STANLEY NORMAN

NEW YORK, July 17.—Keen market interest and high consumption last week offset the burden of heavy stocks, and in the aggregate petroleum product prices were unchanged in the northeastern part of the country.

Reports came from the Gulf Coast that tension on the Bunker C fuel-oil market has eased slightly and that one supplier had consummated business or was willing to sell at 2 cents per barrel below his previous quotation of 80 cents.

The tankcar gasoline market evidenced slight weakness at a few scattered points, but this was mostly confined to the lower octane grades. One or two Gulf Coast refiners were offering 68-octane motor fuel at around 5 cents per gallon, but a cargo sale of 120,000 bbls. of 72-74 octane material was reported at 5¼ cents, approximately level with previous quotations.

Motor-fuel consumption is just beginning to reach the proportions anticipated for midsummer, and companies in this section generally report gains over 1938 ranging up to 12.5 to 15 per cent for June and as high as 20 per cent for the first 2 weeks of July.

Distributors are showing increased interest in the light-fuel-oil market for August and September delivery, but refiners are not anxious sellers of quantities at prevailing prices. The revival of burner sales reported currently in statistics from leading manufacturers, showing deliveries even higher than in 1937, augurs another record in consumption during the coming winter.

Exporters have also registered greater interest during the past 10 days or 2 weeks in the light fuel oils with reasonably high Diesel index. One sale of 48-Diesel-index gas oil for 3¼ cents per gallon to an exporter was reported from the Gulf Coast. The sale was not definitely confirmed, but several suppliers said they understood the inquiry had been withdrawn and were of the opinion the sale had been made at this figure.

Strikes in several automobile factories, with effects on railroads, parts makers, and steel mills, doubtless have exerted influence on the current consumption of residual fuel oil. Early introduction of 1940 automobiles—one manufacturer is beginning production of next year's models in August—is expected again to take up the slack in heavy-fuel-oil consumption and bring it back to the levels prevailing up to the middle of June.

The Bunker C fuel-oil market on the North Atlantic Coast is holding firm at $1.05 per barrel for ship's bunkers. Prices at other points as far south as Miami and as far north as Boston and Canadian ports are unchanged from those established 45 days ago.

Despite the current stocks of motor fuel and the comparatively shallow rate of liquidating excessive inventories, the gasoline market is being maintained at primary markets at approximately the levels prevailing a month ago. The retail market has skidded because of price cutting by independent suppliers. These suppliers are receiving their requirements from the Gulf Coast at prices one-eighth to one-quarter below current quotations.

There has been a substantial improvement in the inquiry and movement of kerosene during the past month. The improvement in kerosene prices has been particularly noticeable in the western Pennsylvania refinery district.

The tankcar prices for motor fuel in New York were ranging from 6 to 6¼ cents per gallon, depending upon the quality submitted. There is every indication that gasoline prices will continue upward during the next 6 weeks.

The excessive stocks doubtless will prove a burden to the domestic industry, and a market of 5 to 5½ cents for 70-octane gasoline may be expected during the next 6 weeks.

The most extensive perturbation centers around residual fuel oil. Purchasers are of the opinion that prices may go as low as 75 cents per barrel. On the other hand, distributors think fuel oil may rise as high as 83 cents per barrel. There is consequently a difference of opinion between the purchasers and suppliers of heavy fuel oil. Results of the difference probably will culminate in a price differential acceptable at Gulf Coast refineries.

There is every indication that domestic gasoline prices will improve and that domestic fuel oil will be a drug on the market for the next 6 weeks. This belief is based upon the fact that demand for domestic motor fuel has been increasing during the past 2 months and that light fuel oil has been one of the lesser desired products.

The demand for kerosene has been on the increase during the past 2 months, and prospective purchasers are no longer withholding their commitments.

Van Covern Estimate

Fred Van Covern, director of the department of statistics of the American Petroleum Institute, in an analysis of the situation said:

"The difference between the 87,100,000 bbl. of gasoline actually in storage on March 31 last, and the 61,000,000-bbl. minimum working stocks required as of September 30 next, is slightly over 26,000,000 bbl. During 1936 the summer liquidation was 16,700,000 bbl.; during the summer of 1937, 16,300,000 bbl. were withdrawn, while the liquidation during the 1938 summer season, whether forced or not through the necessity to conserve cash or for other reasons, amounted to 23,200,000 bbl. What is the industry going to withdraw during the current summer season?"

Mr. Van Covern's own estimates of motor-fuel demand during the second half of 1939 compared with 1938 are set out in the table below. In contemplating these figures, two facts must be borne in mind, (1) that consumption of gasoline during July of 1938 suffered considerably due to the widespread rains which occurred during most of that month; and, (2) that demand during the fourth quarter of 1938 not only reacted to the unusually fine weather of that period, but was also influenced by the uptrend of business activity to the year's high of 104 in December.

DEMAND FOR MOTOR FUEL

(Barrels of 42 gal.)

		Per cent
Third quarter 1939:		
Domestic	152,700,000	*+6.05
Export	11,800,000	—6.60
Total	164,500,000	+5.02
Fourth quarter 1939:		
Domestic	137,000,000	+3.08
Export	11,350,000	—16.83
Total	146,559,000	+1.22

*On the basis of a more nearly normal July 1938, which was abnormally low due to bad weather, this percentage increase would have been nearer 3 per cent.

"Assuming that the demand indicated above for the third quarter actually will be realized and that it is economically desirable actual inventories on September 30 approximate minimum working-stock requirements, the calculated corresponding economic level of runs to stills during this 3 months' period does not exceed 3,225,000 bbl. daily. This compares with the estimated daily average crude-oil runs to stills for the week ended June 24 of 3,430,000 bbl."

A. P. I. Weekly Refinery Statistics

Week Ending July 15, 1939

	Capacity reporting (per cent)	Daily crude runs (bbl.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	546,000	21,624,000	9,974,000
Appalachian	85.9	113,000	3,241,000	629,000
Indiana, Illinois, and Kentucky	89.5	474,000	12,809,000	6,015,000
Oklahoma, Kansas, and Missouri	81.6	268,000	6,711,000	4,338,000
Inland Texas	50.3	130,000	1,576,000	2,110,000
Texas Gulf	89.5	823,000	9,052,000	10,386,000
Louisiana Gulf	97.3	135,000	2,292,000	2,722,000
North Louisiana and Arkansas	55.0	36,000	447,000	840,000
Rocky Mountains	54.2	40,000	1,484,000	734,000
California	90.0	477,000	15,030,000	95,637,000
Total reported	85.8	3,042,000	74,266,000	133,385,000
Estimated unreported	.....	348,000	5,150,000	3,100,000
*Estimated total	.....	3,390,000	79,416,000	136,485,000
*Estimated total previous week	.....	3,420,000	80,823,000	135,167,000
*July 16, 1938	.....	3,221,000	78,693,000	140,628,000

*Bureau of Mines, currently estimated.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ending July 1, 1939	271,567,000 barrels
Week ending June 24, 1939	272,297,000 barrels
Week ending July 2, 1938	291,666,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of July 18, 1939

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank-wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	15.1	13.6	4.0	10.0
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	13.6	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	13.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	9.4
Minneapolis	16.5	15.0	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.8
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich.	13.6	12.1	4.0	7.1
Grand Rapids	14.0	12.5	4.0	9.7
Saginaw	14.0	13.3	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	15.3	5.0	†10.7
South Bend	17.1	15.6	5.0	†10.0
Fargo, N. D.	17.7	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	13.2	4.0	8.0
St. Joseph	14.4	8.9	4.0	7.9
Wichita, Kans.	13.9	10.6	4.0	7.4

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective June 1, 1939, f.o.b. Chicago tank-wagon prices: Standard range oil, 1-99 gallons, 9 cents; 100-149 gallons, 8 cents; 150 gallons and over, 7.5 cents. Stanolex fuel oil No. 1, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex furnace oil, 1-149 gallons, 8.25 cents; 150-399 gallons, 7.25 cents; 400 gallons and over, 6.75 cents. Stanolex Grade A, 1-399 gallons, 5 cents; 400 gallons and over, 4 cents. Stanolex Grade B, 1-799 gallons, 5 cents; 800 gallons and over, 4 cents. Stanolex Grade C, 1-999 gallons, 4.25 cents; 1,000 gallons and over, 3.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank-wag. con'r.	Di-vided dlr.	Inc. tax	tank-wag.
Ohio points	16.0	15.0	5.0	*13.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Atl'tic City, N. J.	10.9	12.7	4.0	7.0
Newark	10.9	12.7	4.0	7.0
Annapolis, Md.	12.85	14.35	5.0	9.5
Baltimore	12.25	13.75	5.0	7.0
Cumberland	13.65	16.15	5.0	10.0
Wash'gton, D. C.	10.50	12.0	3.0	9.5
Danville, Va.	14.45	16.95	6.0	12.9
Norfolk	13.25	15.75	6.0	11.5
Petersburg	13.55	16.05	6.0	11.7
Richmond	13.55	16.05	6.0	10.7
Roanoke	14.75	17.25	6.0	11.0
Charles'n, W. Va.	14.05	16.55	6.0	12.6
Parkersburg	13.35	14.85	6.0	11.2
Wheeling	14.35	15.75	6.0	12.2
Charlotte, N. C.	15.40	17.90	7.0	11.8
Hickory	15.95	18.45	7.0	12.3
Mt. Airy	15.80	18.50	7.0	12.2
Raleigh	15.15	17.65	7.0	11.5
Salisbury	15.45	17.95	7.0	11.9
Charleston, S. C.	14.25	16.75	7.0	10.6
Columbia	15.25	17.75	7.0	11.6
Spartanburg	15.95	18.45	7.0	12.4

Price basis to Essolene undivided dealers: Dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gallons, consumer tankcar plus 2 cents per gallon; 50 to 199 gallons, consumer tankcar plus 1 cent per gallon; 200 gallons and over, consumer tankcar plus .5 cent per gallon.

Nebraska

STANDARD OIL CO. (NEBRASKA)

	Gasoline			Kero.
	Tank-Wag.	Dlr.	Inc. tax	tank-wag.
Omaha	17.5	16.0	6.0	10.3
McCook	16.5	13.5	6.0	9.0
Norfolk	17.0	15.9	6.0	9.0
North Platte	18.3	16.8	6.0	11.1
Scottsbluff	18.0	15.9	6.0	11.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Tank-wag.	Includes tax	tank-wag.
Texarkana, Ark.	14.0	5.0	8.0
Fort Smith	14.0	5.0	7.5
Little Rock	16.75	7.5	8.0
Muskogee, Okla.	13.0	5.0	7.0
Oklahoma City	13.0	5.0	6.5
Tulsa	13.0	5.0	7.0

The tank-wagon price is the price to all classes of trade.

Texas

	Gasoline			Kero.
	Tank-wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14.0	18.0	5.0	7.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.0	18.0	5.0	8.0
San Antonio	14.0	18.0	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	23.5	10.0	17.5
St. John, N. B.	23.5	10.0	17.5
Montreal, Que.	22.0	8.0	14.5
Toronto, Ont.	23.0	8.0	15.5
Hamilton, Ont.	23.0	8.0	15.5
Winnipeg, Man.	26.5	7.0	20.5
Brandon, Man.	28.0	7.0	22.0
Regina, Sask.	26.0	7.0	22.0
Saskatoon, Sask.	28.3	7.0	24.0
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	23.5	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of Louisiana July 6 advanced dealer tank-wagon gasoline .5 cent in Chattanooga.

Atlantic Refining Co. July 8 advanced consumer tankcar and dealer tank-wagon gasoline .5 cent in Scranton.

Standard Oil Co. (Indiana) July 7 reduced dealer gasoline .3 cent in Saginaw.

Crude Oil Price Changes

The Caddo Crude Oil Purchasing Corp. and the Atlas Pipe Line Corp., effective July 17, reduced the price for Cross Lake, Louisiana (Shreveport field), crude oil 10 cents per barrel, making the new price 95 cents per barrel.

Petroleum Products Co., with a refinery at Chanute, Kans., increased the price of oil it buys in the eastern Kansas fields from 4 to 13 cents per barrel, effective July 16. The new price starts at 68 cents for 25-25.9 gravity, with 6 cents added for each degree up to and including 28°-28.9° at 86 cents, then 2 cents added for each degree up to and including 40 gravity and over at $1.10. About 1,600 bbl. per day is affected.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline			Kero.
	Cons'r. tank-wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	21.0	18.0	7.0	9.0
Augusta	20.0	17.0	7.0	9.0
Macon	19.0	16.0	7.0	10.0
Savannah	19.0	16.0	7.0	8.0
Birmingham, Ala.	21.0	18.0	8.0	8.5
Mobile	18.5	15.5	9.0	8.5
Montgomery	22.0	19.0	9.0	10.5
Jackson, Miss.	19.0	16.0	7.0	9.5
Vicksburg	19.0	16.0	7.0	9.0
Jacksonville, Fla.	20.0	17.0	8.0	8.0
Miami	20.0	17.0	8.0	8.0
Pensacola	21.0	18.0	9.0	8.0
Tampa	20.0	17.0	8.0	8.0
Lexington, Ky.	19.5	16.5	6.0	10.0
Covington	17.5	14.5	6.0	9.5
Louisville	18.5	15.5	6.0	9.0
Paducah	18.5	15.5	6.0	9.0

Price basis to tank-wagon consumers: Effective January 4, 1937; 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.0
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	12.5	14.0	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	13.0	14.5	5.0	10.5
Altoona	13.0	14.0	5.0	10.5
Dover, Del.		14.0	5.0	10.5
Wilmington		13.5	5.0	9.75

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon.

*Voluntary discount of 1 cent per gallon allowed to dealers only at time of delivery.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
Albany	11.5	13.5	5.0	7.00
*Met. N. Y.:				
Manhat., Bronx.	11.6	13.0	5.0	6.75
Queens, Br'klyn	11.6	13.0	5.0	6.75
Staten Island	11.6	13.0	5.0	6.75
Buffalo	12.4	11.8	5.0	7.50
Rochester	12.6	14.0	5.0	7.75
Syracuse	12.2	13.5	5.0	7.25
Boston	10.5	12.25	4.0	6.50
Portland, Me.	11.5	12.8	5.0	6.75
Manchester, N. H.	12.2	14.2	5.0	7.25
Burlington, Vt.	12.0	13.0	5.0	7.25
Springfield, Mass.	11.2	12.5	4.0	6.00
Worcester	11.0	12.5	4.0	7.00
Hartford, Conn.	10.9	13.0	4.0	6.50
New Haven	10.8	12.25	4.0	6.00
Providence, R. I.	10.5	12.3	4.0	6.50

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and New England points for tank-wagon delivery to the following: Annual purchases 10,000 gallons and under, tankcar price plus 2 cents per gallon; annual purchases 10,000 gallons up to 50,000 gallons, tankcar price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gallons, tankcar price plus 1 cent per gallon; annual purchases 200,000 gallons and over, tankcar price plus one-half cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gallons receive a discount of one-half cent per gallon.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank-truck	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	†13.75
Spokane	21.5	22.5	6.0	†16.75
Tacoma	20.0	21.0	6.0	†13.75

*Includes 5-cent state tax. †Includes .25-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank-wag.	Dlr.	Incl. tax	tank-wag.
Denver, Colo.	15.5	...	5.0	11.5
Grand Junction	18.0	...	5.0	15.0
Pueblo	16.0	...	5.0	9.0
Casper, Wyo.	17.0	...	5.0	11.5
Cheyenne	15.0	...	5.0	13.0
Billings, Mont.	18.0	...	6.0	13.0
Butte	19.5	...	6.0	15.5
Great Falls	19.0	...	6.0	15.5
Helena	20.0	...	6.0	15.5
Salt Lake, Utah	17.0	17.0	5.0	16.0
Boise, Idaho	20.1	20.1	6.0	18.0
Twin Falls	20.6	20.6	6.0	18.0
Albu'que, N. M.	17.0	17.0	6.5	10.0
Roswell	15.5	15.5	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of .5 cent. †Includes state tax of 1 mill.

Tank-wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Cons. tank-car	Dlr. tank-wag.	Inc. tax	tank-wag.
New Orleans, La.	16.75	19.25	*10.0	†11.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡12.5
Lafayette	15.00	17.50	8.0	‡11.0
Lake Charles	14.75	17.25	8.0	‡12.5
Shreveport	13.50	16.00	8.0	‡11.0
Knoxville, Tenn.	18.00	20.50	8.0	14.5
Memphis	16.00	18.50	8.0	11.0
Chattanooga	16.00	19.50	8.0	14.0
Nashville	17.00	19.50	8.0	12.0
Bristol	18.25	17.00	8.0	13.0

Essolene at dealer price less .5 cent per gallon to undivided dealers.

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of July 18, 1939

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:	
62 octane and below	.04¼
63-66 octane	.04½
67-69 octane	.04¾
70-72 octane (regular)	.05
60-62 400 grades:	
62 octane and below	.04¼
63-66 octane	.04½
67-69 octane	.04¾
70-72 octane (regular)	.05
64-66 375	.04¼
68-70 360	.05

NORTH TEXAS—

U. S. Motor grades:	
62 octane and below	.04¼
63-66 octane	.04½
67-69 octane	.04¾
70-72 octane (regular)	.05
60-62 400	.04¼
64-66 375	.04¼

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05	.05⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
62 octane and below	.04½	.04¾
67-69 octane	.04⅞	.05⅛
70-72 octane	.05¼	.05½

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05	.05⅛
60-62 400 grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04½	.04⅝
67-69 octane	.04¾	.04⅞
70-72 octane (regular)	.05	.05⅛
64-66 375	.04⅛	.04¼
68-70 360	.05	.05¼

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.04½	.05
65 octane	.06¼	.06⅜
68-70 octane		.06½

CALIFORNIA (domestic movement)

54-58 U. S. Motor	.06¼	.08
58-60 400, 65 oct. and higher	.07¼	.09

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06⅝

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York Harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.04¼	.04⅜
60-64.9		.04½
65 octane and higher	.05⅛	.05¼
68-70	05⅛	.05½

Naphtha

PENNSYLVANIA (inland refineries)—

52-56 450 (blending)	.04¼	.04½

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70	.02¾
Grade 18-55	.03¼

NORTH TEXAS—

Grade 26-70	.02¾
Grade 18-55	.03¼

CALIFORNIA—

75-85 375-390	.06	.06¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70	.03⅛

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 l.b.p., 110-flash, 540-550 e.p.	.03⅜	.03⅝
41-43 gr., 300-320 l.b.p., 110-125 flash, 500-520 e.p.	.03½	.03¾
46-48 gr., 210-230 l.b.p., 480-max., e.p.	.03⅞	.04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.03⅜	.03⅝
42-44	.03⅜	.03⅞

NORTH TEXAS—

41-43	.03⅜	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.03¾	.04

ARKANSAS (Ark. and N. La. del.)—

41-43	.04⅛	.04¼

PENNSYLVANIA (inland refineries)—

45	.04⅞	.05
46	.05	.05⅛
47	.05⅛	.05¼

CHICAGO (Based on Group 3)—

41-43	.03⅝	.03⅞
42-44	.03¾	.04

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04¾	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.04⅜

***GULF COAST (domestic)—**

41-43	.03½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅜	.03½
No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03½	.03¾
No. 2 straw, 32-36	.02¾	.03
No. 2 dark, 32-36	.02⅝	.02¾
No. 3 zero to 15, 28-32	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅜	.02½

NORTH TEXAS—

No. 1 prime white, 38-42	.03½	.03⅝
No. 1 straw, 38-40	.03½	.03¾

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03⅜

CHICAGO (Based on Group 3)—

Range oil	.03⅝	.03⅞
No. 1 prime white, 38-40	.03½	.03⅝
No. 1 straw, 38-40	.03⅜	.03½
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03⅛	.03¼
No. 3, zero to 15, 28-32	.03	.03⅛
No. 3, 15 and above, 28-32	.02¾	.02⅞

NEW YORK (Bayonne, N. J.)—

*No. 1	.04	.04¼
*No. 2		.03¾
*No. 4		.03¾

*Barge deliveries ⅛ to ¼ cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02½	.02⅝
No. 4 low pourpoint, 24-28	.90	1.00
No. 4, 15 and above, 24-28	.80	.90
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH TEXAS—

U.G.I. gas oil	.02½	.02⅝
No. 4, low pourpoint, 24-28	.90	1.00
No. 5, low pourpoint, 18-22	.70	.75
Below 14 fuel oil, industrial	.45	.55

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.70 .75

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low pourpoint, 24-28	1.00	1.10
No. 4, 15 and above, 24-28	.85	.95
No. 5, low pourpoint, 18-22	.70	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pourpoint, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.45

PENNSYLVANIA (inland refineries)—

36-40	.04½	.04¾

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.10	1.30
24 plus Diesel, per bbl.	.80	1.15
24 plus Diesel (bunkers)	1.15	1.30
12-16 (bunkers at tidewater)	.70	.90
10-16 (cargo lots)	.60	.80
12-17 (tankcars)	.50	.90
10-17 (high sulfur)	.45	.85
San Joaquin Valley:		
10-18 (tankcars)	.50	.75
24 plus Diesel, per bbl.	.90	1.20
San Francisco:		
24 plus Diesel, per bbl.	1.30	1.45
24 plus Diesel (bunkers)	1.35	1.55
10-16 (bunkers)	.90	.95

GULF COAST—

No. 2 fuel	.03⅛	.03¼
43-47 Diesel		.03½
48-52 Diesel	.03¼	.03⅜
53-57 Diesel	.03⅝	.03½
Bunker C (bulk cargoes)	.77	.80
Bunker C (bunkers)	.80	.85

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.03¾
28-30 Diesel (lighterage 6¼c per bbl.)		1.65
28-30 Diesel (tankcars)	.04	.04¼
Bunker C (to ocean-going ships in N. Y. Harbor)		1.05
Industrial fuel (tankcars)		.03¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

190-200 D, 15-25		.19
150-160 D, 0-10	.14¼	.16
150-160 D, 15-25	.13½	.15½
150-160 E, 15-25	.13	.15
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.12½
600 dark green (untreated)	.04½	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pourpoint	.18	.18½
15 pourpoint	.17	.17½
25 pourpoint	.15½	.16
Steam refined:		
600	.08½	.10
650	.10½	.11
600 flash	.11	.12
630 flash	.13½	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

150-3	.09
180-3	.10
180-4	.09½
200-3	.10½
200-4	.10
250-3	.11½
250-4	.11
280-3	.12½
280-4	.12
300-6½	.13
400-3½	.14
100-2½ paraffin oil	.06
15-20 pourpoint:	
200-3	.10
200-4	.09½
250-3	.11
250-4	.10½
280-3	.12
280-4	.12½

GULF COAST—

Pale oils:		
200-3	.07	.07¼
300-3	.07¼	.07¾
500-3½	.08¼	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09¼	.09¾
1,500-4	.09¾	.10
Red oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07⅝
500-5-6	.08	.08⅛
750	.08¾	.09
1,200-5-6	.09¼	.09⅛

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:		
Zero pourpoint	.18½	.19
10 pourpoint	.18	.18½
15 pourpoint	.16½	.17
25 pourpoint	.15	.15½
200 vis. at 70° F., 3 color:		
Zero pourpoint	.19½	.20
10 pourpoint	.19	.19½
15 pourpoint	.18½	.19
25 pourpoint	.17	.17½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.0285	.03

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0290	.03
124-126 (a.m.p.) w.c. scale	.0290	.03

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0350
125-127 (a.m.p.) wax		.0360
128-130 (a.m.p.) wax		.0375
130-132 (a.m.p.) wax		.0435
133-135 (a.m.p.) wax		.0465
135-137 (a.m.p.) wax		.0490
124-126 (a.m.p.) w.s.	.0290	.03
124-126 (a.m.p.) y.s.	.0295	.03
Petrolatum in barrels, carload lots:		
Dark green	.02	.02½
Amber	.02⅝	.02½
Extra amber	.02⅝	.02¾
Lily white	.05½	.05¼
Snow white	.06½	.06¼
Cream	.04½	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¼	.04⅜
60-62 400	.04⅝	.04½
65 octane	.04⅞	.05
68 octane	.05¼	.05¼
70 octane	.05½	.05⅝

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.04½	.04¾
65-69 octane	.04¾	.05
Above 69 octane	.05	.05½

KEROSENE

GULF COAST—

41-43 prime white	.03½
41-43 water white	.03½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbls.)—

Cylinder stocks:		
600 Warren E	.15	.15½
600 S.R. unfiltered	.16	.16½
630 S.R. unfiltered	.17	.17½
600 flash, S.R.	.17	.17½
630 flash, S. R.	.20½	.21
Bright stocks:		
8 color	.16¼	.16½

NEUTRAL OIL

200-3 color	.21½	.22
150-3 color	.19½	.20

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude scale:		
124-126 w.s.	.0290	.03
124-126 y.s.	.0295	.03

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1939 High	1939 Low	Week ending July 15 High	Week ending July 15 Low	Week ending July 15 Close	Stocks	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
70	50	64⅛	63	63¾	Amerada Corp.	788,675	N.P.	50cQ	7-1-39	$2.00	$2.07	$3.04	78	55	111⅞	51⅛
23½	18½	20⅜	20	20⅛	Atlantic Refining	2,663,999	$25	25cQ	6-15-39	1.00	1.40	3.51	27⅜	17⅜	37	18
21½	10⅞	13½	12	13¼	Barber Asphalt Co.	390,223	$10	75c	12-16-37	....	—.85	1.91	23¾	12⅛	43⅜	10⅛
19½	12⅜	14¼	13⅜	13½	Barnsdall Oil Co.	2,250,344	$5	25cQ	5-1-39	1.00	1.26	.85	21⅜	10⅛	35¼	10
9¼	7	8	7½	7⅝	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	8-15-39	.80	.55	1.48	10¾	7	17⅞	7
31½	20½	22⅜	21	21	Continental Oil of Delaware	4,682,581	$5	25cQ	6-27-39	‖1.00	1.10	2.98	35¾	21¼	49	24
8⅜	4¾	5½	5¼	5⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	.83	.94	9¾	5	17⅝	4¾
20¼	12⅜	14	12⅜	12¾	Lion Oil Refining	435,815	N.P.	25cQ	4-20-39	1.00	2.09	2.17	25½	15⅝	34	12½
16½	11⅛	12⅝	12⅜	12⅝	Mid-Continent Petroleum	1,857,912	$10	25c	6-1-39	.60	.56	2.86	22⅝	12¼	35⅝	14
14⅞	10⅜	11¼	11	11⅛	Mission Corporation	1,379,245	$10	25c	6-29-39	1.00	1.04	1.31	17⅜	10⅝	34	15
15½	6½	8⅛	7⅛	7¼	National Supply	1,155,517	$10	$2 pf.‡	12-22-37	....	—.79	4.90	28	12½	41⅜	17⅝
10¼	6⅝	6⅞	6⅝	6¾	Ohio Oil Co.	6,563,377	N.P.	20c	12-15-38	.20	.25	1.30	14⅜	8⅜	22⅞	8
11⅞	8⅞	9	8¾	8¾	Pacific Western Oil	1,000,000	N.P.	50c	12-20-38	.50	1.22	1.39	15⅞	10¼	29¾	11¾
6¾	5	..	..	..	Pan-American Pet. & Trans.	4,702,945	$5	$1*	12-21-37	....	.08	1.18	9¼	6¼	17⅛	7
43¾	31¼	34¾	33	34¾	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-39	‖2.00	2.03	5.42	44⅜	27¼	64	30½
22½	17¼	19¼	19	19¼	Plymouth Oil Co.	1,006,200	$5	35cQ**	6-30-39	1.40	2.59	2.85	25⅝	15	29⅞	13
11¼	6⅝	7⅛	6¾	7	Pure Oil Co.	3,982,031	N.P.	25c	12-1-37	....	.38	2.15	13½	8¼	24⅜	8¾
10¼	6⅝	7⅞	7¼	7¾	Richfield Oil Corp.	4,010,000	N.P.	50c	12-21-38	.50	.51	.35	9⅞	5	6½	4⅛
22⅜	16⅛	17⅞	17¼	17⅝	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-39	1.00	1.52	1.97	27½	15½	54⅛	16
15⅛	10⅛	11	10⅝	11	Shell Union Oil	13,070,625	N.P.	25c	7-20-39	.70	.72	1.44	18⅜	10	34⅜	14⅞
29½	18½	19⅜	19¼	19¼	Skelly Oil	995,349	$15	50c	12-15-38	1.00	2.27	6.07	34⅜	18½	60⅝	26⅛
13⅜	10½	11⅜	11¼	11⅜	Socony-Vacuum	31,206,071	$15	25cSA	3-15-39	.50	1.29	1.82	16⅜	10⅜	23¼	13
30⅛	25⅛	26⅛	25⅝	26	Standard Oil of California	13,004,153	N.P.	30cQ†	6-15-39	1.40	2.22	3.17	34⅞	25⅛	50	27⅛
29⅛	23¼	25⅛	24⅜	25	Standard Oil (Indiana)	15,272,020	$25	25cQ	6-15-39	1.00	1.82	3.66	35½	24⅜	50	26⅛
50⅝	46	..	..	..	Standard Oil of Kansas	106,190	$10	$2	12-8-38	2.00	5.25	6.93	50½	32½	43	30⅝
53¼	40⅛	43¼	41⅞	43	Standard Oil of New Jersey	26,618,065	$25	50c§	12-15-38	§1.50	2.86	5.64	58⅜	39⅜	76	42
66	46	51¾	50	51¾	Sun Oil	2,316,484	N.P.	25cQ	6-15-39	1.00	1.07	3.86	65½	45	77½	44½
3¼	2	2⅛	2	2	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	.10	.24	.32	4¼	1¾	7⅜	1½
48¼	34⅞	37	36	36	Texas Corp.	10,876,882	$25	50cQ	7-1-39	2.00	2.13	5.02	49⅝	32⅝	65½	34⅜
5¾	3½	4⅛	3⅞	3⅞	Texas Gulf Producing Co.	888,142	N.P.	10c	6-15-39	.15	.86	.68	5⅞	2⅝	9⅝	2
10⅛	7½	7¾	7⅝	7⅝	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-39	.40	1.16	1.11	12½	7	16⅝	5⅝
14⅛	11¼	12¼	11⅞	12⅛	Tide Water Associated	6,375,253	$10	25c	6-1-39	1.00	1.28	2.08	15⅜	10½	21⅝	13⅛
19¾	16⅛	16½	16¼	16½	Union Oil of California	4,666,270	$25	25c	8-10-39	1.20	1.47	2.58	22½	17⅛	28⅛	17½
23⅝	20⅛	22¼	20⅞	20⅞	Union Tank Car Co.	1,177,381	N.P.	30cQ	3-1-39	1.30	1.16	1.70	23½	20	31½	22
3¾	2½	2¾	2½	2¾	Wilcox Oil & Gas	487,568	$5	....	5-10-28	....	.52	.24	3½	1⅝	6¼	1⅜

*Payable in 3⅛ per cent notes. †Includes extras. ‡One-tenth share $2 preferred stock. §Also 1½ per cent stock dividend. ‖Also right to subscribe to bonds. ¶Also 1 per cent in stock. **Also 2 per cent in stock. —Deficit.

New York Curb Exchange

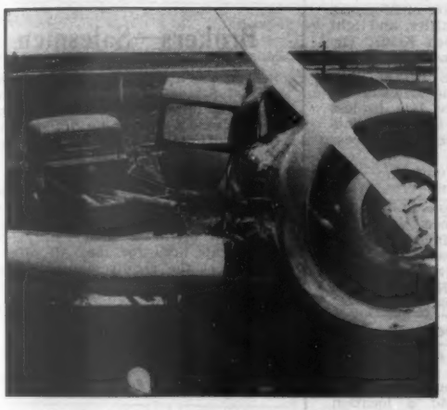
1939 High	1939 Low	Week ending July 15 High	Week ending July 15 Low	Week ending July 15 Close	Stocks	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1938	Com. sh. earn. 1938	Com. sh. earn. 1937	1938 High	1938 Low	1937 High	1937 Low
9	5½	6½	6	6	American Republics Corp.	1,308,049	$10	10c	7-11-38	$0.10	—$0.22	$0.27	11⅝	5	10	6⅝
7¼	3½	3⅞	3⅝	3⅝	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	10¼	4⅜	21⅜	7
34⅜	27¼	..	..	..	Buckeye Pipe Line Co.	200,000	$50	50c	3-15-39	2.00	2.36	4.02	39	22½	51½	36
130	110	112	112	112	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	6-26-39	6.50	5.32	6.73	128	97	112	95½
9¼	5½	5⅞	5½	5⅝	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	11	5⅛	5⅝	1⅛
1½	½	1½	1¼	1½	Cosden Petroleum	462,551	$1	....	.....	....	....	.19	2⅝	⅞	5½	1⅛
23⅜	16⅜	19	18¼	18⅜	Creole Petroleum	6,975,383	$5	50cSA†	6-15-39	1.00	1.64	1.61	27½	17½	38⅝	20¼
7⅛	3⅝	4⅜	3⅝	3⅞	Darby Petroleum	351,390	$5	25cSA	1-15-39	.50	....	1.36	10¼	5½	18⅝	6⅛
2⅜	1⅝	2	2	2	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	3½	1½	8⅜	2¼
20	15⅛	15½	15½	15½	Eureka Pipe Line	50,000	$50	50c	8-1-39	3.00	—.37	—.12	31	16	47½	24½
40	29¼	32¼	31⅜	32¼	Gulf Oil Corp.	9,076,202	$25	25cQ	7-1-39	1.00	1.43	3.51	46⅜	33	63½	33
69⅝	53	58½	57½	57½	Humble Oil & Refining	8,987,840	N.P.	37½c	7-2-39	3.00	3.98	5.22	72⅝	56	87	54⅝
17	14	15¼	14⅞	15¼	Imperial Oil of Canada	26,965,078	N.P.	62½cSA†‡	6-1-39	1.25	.96	.98	19½	14⅛	24¼	14½
7	5⅝	6¼	6	6	Indiana Pipe Line	300,000	$10	30c	5-15-39	.50	.47	1.03	9⅜	6	15	5⅞
27½	20¼	22⅛	21½	22¼	International Petroleum	14,324,088	N.P.	1.00†‡	6-1-39	2.50	1.98	....	31¼	21	39½	23½
3½	2¼	2⅜	2⅜	2⅜	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	.10	.14	.17	5	2½	8⅜	2⅝
9½	7⅛	9⅛	9	9⅛	Lone Star Gas	5,553,747	N.P.	20c	4-20-39	.60	.88	1.14	10⅝	6⅝	14¼	5¼
7⅞	4⅞	5⅜	5⅛	5⅜	Louisiana Land & Exp.	2,977,449	N.P.	10cQ	3-15-39	.45	.45	.58	8⅜	6½	15¼	6⅝
17	15	15	15	15	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-39	1.00	2.28	3.26	24	16	33½	17
8¾	7	7⅛	7	7⅛	Midwest Oil Co.	998,474	$10	50c	12-15-38	1.00	.93	1.14	9⅜	6⅝	14⅝	6¼
5½	4⅞	5⅛	5	5⅛	Mountain Producers	1,593,584	$10	30cSA	6-15-39	.60	.62	.76	5¾	4½	7⅞	4⅛
13¼	11¼	11⅜	11½	11⅜	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-39	1.00	.84	.96	14⅝	11½	19½	12
8½	7¼	8⅜	8⅜	8⅜	National Transit	509,000	$12.50	35c	6-15-39	.75	.88	1.19	9¼	6½	12½	7¼
1¾	1½	1½	1½	1½	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	2⅜	1½	5	1⅛
4⅞	4	4	4	4	New York Transit	100,000	$5	15c	4-15-39	.25	.16	.49	4½	3½	5⅜	3⅞
6	4½	..	..	..	Northern Pipe Line	120,000	$10	15c	6-1-39	.35	.24	.78	6	4	12⅜	5⅜
7⅝	4¼	5⅝	5½	5⅜	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅜	3½	9⅝	2⅜
2¾	1¼	2	2	2	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	4½	1⅝	12⅜	2
3	2	..	..	..	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	4	2⅛	6½	2¼
4	3½	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-39	.30	—.27	.85	5⅜	3¼	7¼	3⅞
34⅞	27¾	30¼	29⅝	30¼	South Penn Oil	1,000,000	$25	37½cQ	3-31-39	1.75	1.44	4.64	39	28¾	56	35
19¾	18	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	7-1-39	2.00	—.41	.95	22¼	16½	42	20
18¾	17¼	18⅛	18	18⅛	Standard Oil of Kentucky	2,604,790	$10	25c	6-15-39	1.25	1.45	1.60	18¾	15	21½	14¾
11	6	11	10⅞	11	Standard Oil of Nebraska	161,403	$25	25c	3-29-37	....	—.69	—.58	8¾	5½	13⅜	8
21¼	17	21	20½	21	Standard Oil of Ohio	753,740	$25	25c	3-15-39	1.00	1.81	3.67	22⅜	16¼	45	16
2⅝	1⅞	2	1⅞	2	Sunray Oil	2,007,076	$1	5c	4-27-39	.05	.23	.42	3¼	2	4⅞	2
4	2⅝	3	2⅞	3	Texon Oil & Land	936,024	$2	10c	6-30-39	.60	.56	.51	5¼	3½	7⅝	2
5½	2½	3⅝	3½	3½	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	7⅝	4¼	13⅞	4⅝
3⅜	1⅝	1⅞	1⅜	1⅞	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	25	5¼	2⅝	13⅞	3

†Includes extras. ‡Payable in Canadian funds. ‖Of which $1 was in preferred stock. —Deficit.

New or Improved Equipment

No Time Lost Getting Tools to Well Where They're Needed

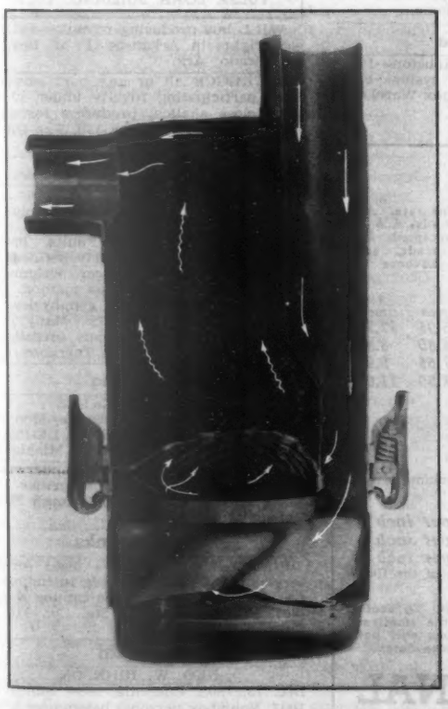
Houston Engineers, Inc., Houston, Tex., engaged in the manufacture and servicing of oil-well fishing tools,



established a fast service record when the company prepared and shipped by air express 1,527 lb. of tools to Vendome Petroleum Co. No. 1 Kenilworth, a wildcat near New Orleans, La. The equipment was on location within 3 hours and 10 minutes after the request for the tools had been received.

New Types of Air-Cleaner Are Placed on Market by Vortox

This latest air-cleaner of Vortox Manufacturing Co., Claremont, Calif., for small and medium-sized equipment is made in two types, Type R and Type S. The air, made to whirl rapidly as it enters the cleaner, produces a vortex action, picking up oil from the oil reservoir, spraying it on the impingement surfaces of the

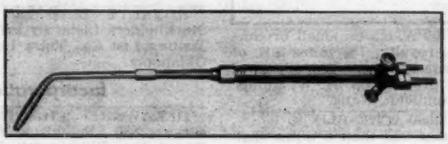


vortex chamber, and into the filter element, thoroughly washing it of dust. Thus, air entering a Vortox air cleaner is first subjected to the efficient cleaning action of a vigorous oil spray and a strong centrifugal action before it can enter the filter for final cleaning. Oil drains from the filter element, carrying the small amount of dust entrapped there down into the oil reservoir. Oil is carried into the filter element by the first revolutions of the engine.

The principal difference between the Type R and Type S cleaners is that the Type R, shown in the illustration, takes air in through a vertical inlet stack, while the Type S admits air over the edge of the cup. Under conditions where it is desirable to extend the inlet of the air-cleaner to reduce the dust load or where chaff or fibrous materials are encountered, the Type R is recommended.

Welding and Heating Blowpipe for Heavy Duty Is Announced

Such metal-working operations as forging, forming, straightening, bending, and pressing can be effectively and economically performed with the aid of the intense, localizedd heat of the oxyacetylene flame. Of late, the usefulness of the oxyacetylene flame for these "smithing" operations has been increased by the availability of the large-capacity heating blowpipe. This blowpipe, distributed by the Linde Air Products Co. and known as the Oxweld (Type W-26) heavy-duty welding blowpipe, is for welding and heating ranges



above those which can be handled by the ordinary blowpipes. It delivers tremendous heat to a localized area, and does this so quickly that metal-working and heat-treating can be accomplished at top speed.

Here and There With Men Who Manufacture Equipment

H. A. Webb, 4038 Colgate Street, Houston, Tex., has just joined the staff of the Harnischfeger Corp. in the Texas territory, representing P&H-Hansen welders and Smootharc welding electrodes.

Orders received by General Electric Co. during the first 6 months this year amounted to $169,071,646, compared with $128,223,823 for the same period last year, an increase of 32 per cent.

Quaker City Rubber Co., Philadelphia, Pa., has opened a branch in Houston, Tex., at 201 San Jacinto Street, in charge of H. M. Sossaman.

Baroid Buys Mepham and Williams

Baroid Sales Department of National Lead Co. has acquired the drilling-mud business of Geo. S. Mepham Corp. and C. K. Williams & Co. of California. This will enable Baroid to offer in addition to the products previously handled by it those formerly handled by Mepham and Williams, including Colox, Jelox and Chemical Z. These may be obtained in the various oil fields from the same distributors by whom they previously were handled.

Garneau Opens Service Shop

Hughes Garneau has opened a shop at 860 North Lewis Avenue, Tulsa, to provide service in the lining of pipes and any fittings used by the oil industry. The shop is equipped to line both new and old pipe, and to clean and line pipe that has been taken up. Mr. Garneau will maintain an office in Room 314, Thompson Building, Tulsa.

Smith Separator Is Absorbed by Parkersburg Rig & Reel

Parkersburg Rig & Reel Co., which was exclusive distributor for Smith Separator Co., of Tulsa, has acquired

E. H. ROSS

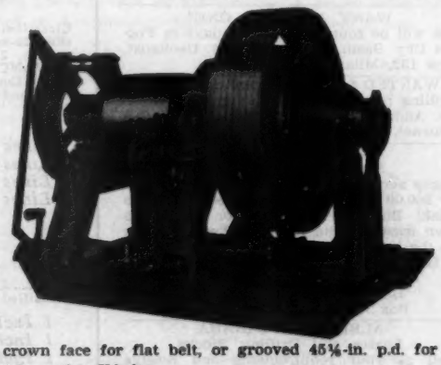
R. S. McKEEVER

all rights and interests in the Smith separator and other products of Smith Separator Corp. Parkersburg will continue manufacturing its newly acquired line in Tulsa and market it under the trade name of "Parkersburg-Smith."

R. S. McKeever, E. H. Ross, and J. H. Smyth have taken positions with Parkersburg and will be active in the selling and designing of Parkersburg-Smith separators. Mr. McKeever was formerly president of the Smith Separator Corp., and Mr. Ross and Mr. Smyth were engaged in selling and engineering work respectively.

Superior Unitized Countershaft Is Designed for Heavy Work

The new Superior unitized roller-bearing countershaft, introduced by the National Supply Co., is for heavy pumping and for cable-tool drilling, with either horizontal or vertical engines. It can be furnished as No. 600 for straight pumping, without provision for well servicing; or as No. 601, when equipped with reverse mechanism, to perform the functions of a reverse clutch. The clutch pulley is mounted on roller bearings and can be either 46-in. diameter by 16-in.



crown face for flat belt, or grooved 45¼-in. p.d. for 8-D section V-belts.

The clutch pulley is overhung to facilitate installing endless flat belt or V-belts, for which the only preliminary is removing two pins from the vertical clutch-shifter lever and swinging the lever out of the way. The clutch is of the disk type, toggle-actuated, with single point adjustment and extra-large area of friction rings. The central friction ring is in halves to permit easy removal for relining when necessary. The 4⅛-in. diameter clutch-shaft is carried by roller bearings. Bulletin 223 gives detailed information.

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LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up.—Owners—Address Attorney, Box 1122, Little Rock, Ark.

ILLINOIS 60,000 acres in and near production. Illinois Minerals Company, Cairo, Illinois.

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SACRIFICE 40-acre Oil Lease, Chaves County, for only $10.00, full price. Guarantee title P. O. Box 191, Clovis, N. Mex.

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P. O. Box 774 Oklahoma City, Okla.

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810 Lancaster Bldg., Calgary, Alberta.

I HAVE some leases and royalties for sale close to drilling operations in Hamilton County, Illinois. If interested write GEORGE W. HOGAN, JR.
McLeansboro, Illinois.

WANTED man to drill on percentage basis, Pontotoc Co. northeast of Ada, Oklahoma. Clear title. Address Box K-182, The Oil and Gas Journal, Tulsa, Okla.

Leases and Drilling Blocks

NEW MEXICO WEEKLY OIL SCOUT REPORT.—Send for sample copy. Roy G. Barton, Box 96 Hobbs, N. M.

210 ACRES near well now rigging up, Lagrange County, Indiana, near Michigan line. Few smaller leases reasonable by owner and drilling proposition 10 miles northeast of me.
J. W. HUNT, Lagrange, Ind.

OIL DEVELOPING, high gravity less than 1000 ft. also deeper strata productive. More development wanted. Good leases available. Advise your interest. We will connect you with reliable parties. Chamber of Commerce, Le Veta, Colorado.

SHALLOW OIL near La Veta, Colo. No proration. Seven wells now drilling. Our blocking has locations set for 100 more wells. We need help in developing. Will sell interests in drilling wells or offsetting leases or give percentages for drills. S. W. Pressey, Box 614, Pueblo, Colo.

1/16 RECORDED OIL AND GAS LEASE $125

Will drill one well all costs paid, offsetting producing well new Kansas Oil & Gas field and offer recorded lease assignments, 1/16th, $125.00 or 1/8th $250.00. Commence drilling ten days. Prospectus filed with S.E.C. Sent on request. Address P.O. Box 389, Paola, Kansas.

FOR SALE: 400 A. leases, small production, one-eighth royalty, 7½ miles S.E. of Humboldt, Kansas. 33 gravity oil, good water pressure proposition. H. W. Childs, Route No. 2, Humboldt, Kans.

SOLID 2,500-ACRE BLOCK
Oil and gas leases less than 5 miles shallow Illinois production. Will sell all except 100 acres for 1,000-foot well and $5.00 per acre. Good geology.
Address Box 190
The Oil and Gas Journal
Tulsa Oklahoma

$1,200 ONE-HALF INTEREST in 2 drilling wells and 240 acres on pipe line. Adjoining leases have made $50,000 and $100,000 in oil. Three sands, no dry holes or wells drilled on acreage. Laurence Price, Coweta, Okla.

For Sale—Maps

TEXAS and NEW MEXICO
UP-TO-DATE OIL DEVELOPMENT MAPS
Zingery Oil Map Co., Fort Worth, Tex.

Situations Wanted

EXPERIENCED refinery technician will operate your old plant or build and operate new plant more efficiently and at a greater profit. Graduate M.I.T. Chemical Engineer with 13 years' industrial experience including positions as Process Supervisor and Chief Chemist. Experienced in development and manufacture of lube oils, greases, wax, asphalt, specialties, and light oils. References. Address Box K-162, The Oil and Gas Journal, Tulsa, Okla.

LICENSED PRIVATE PILOT
Wishes to contact Pipe Line officials. By airplane I can patrol more line in less time and more efficiently. Salary secondary. All replies held confidential. Address Box K-183,
The Oil and Gas Journal,
Tulsa, Oklahoma.

OIL SPECIALIST tax consultant. Age 37. C.P.A. 14 yrs. experience, which includes systematizing, financial reports, and diversified public accounting. Highest credentials as to integrity and creative ability. Address Box K-130, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

IF YOU know drilling or production servicing, we will be glad to assist you in purchasing our servicing or cleanout equipment, and recommend a location where plenty of work is available from major oil companies. Cardwell Mfg. Co., Inc., P. O. Drawer 2001, Wichita, Kans.

Mailing Lists

ROYALTY Lists. Oil Investor Lists. Stockholders Lists. By states. Oil Industry Mailing List Co., Tulsa Loan Bldg., Tulsa, Oklahoma.

Incorporations

DELAWARE CHARTERS: Complete service $35. Submitted forms. Chas. G. Guyer, Inc., Wilmington, Delaware.

CHARTERS — Delaware best, quickest, cheapest, more liberal. Free forms. Colonial Charter Co., Wilmington, Del.

Money Raising

CAPITAL WANTED—To buy producing properties in Texas. Experienced, legitimate. No mail promotion. References exchanged. Address Box K-171, The Oil and Gas Journal, Tulsa, Oklahoma.

Real Estate

FOR Lease: Warehouse Houston—10,000 sq. ft., car level, sprinkler system, elaborate offices. For details—Knox Warehouse, Houston, Texas.

Royalties

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Brokers—Salesmen

Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Security and Exchange Commission. Inquiries invited.

B. D. BUCKLEY
Paul Brown Bldg., St. Louis, Mo.

PRODUCING OIL ROYALTIES
15 years of experience.
L. H. WITWER
703 Kennedy Bldg., Tulsa, Okla.

WILL BUY non-producing landowners royalty—under drilling wells only. P. H. HAWLEY, 727 W. 7th St., Los Angeles, Calif.

WANTED producing oil royalties and oil payments in North and West Texas and New Mexico. P. O. Box 1535, Fort Worth, Texas.

PRODUCING AND NON-PRODUCING ROYALTIES
Either to buy or to sell properties of merit, communicate with
WALTER T. SCOTT
TULSA LOAN BUILDING, TULSA

WILL buy producing royalties and mineral rights in Arkansas. P. O. Box 807, El Dorado, Ark.

SACRIFICE all or any part perpetual, fully participating royalty under 80 acre tract close shallow producers for $25.00 per acre. Address Box K-172, The Oil and Gas Journal, Tulsa, Oklahoma.

Survey Service

REMEMBER EAST TEXAS
When all other methods fail, employ my divining or dowsing method. If oil exists this method finds it. Faults, broken, treacherous areas accurately defined. Our Watson #2, first producer Wilmington, Calif. field, located by this method. More reliable than mechanical geophysics. Ask any unbiased oil authority. Many years' experience. A wise man investigates. George Miller, 1548 Post, Torrance, Calif.

Financing

CAPITAL SEEKERS
Put your project before 260 Key-Men. Cost trifling. Details free. AMSTER LEONARD, Fox Theater Building, Detroit, Michigan.

AMERICA'S 83 leading underwriters who bought a billion of securities 1938 $3.00. JOHN MORRIS, 1040 South Paxon, Philadelphia, Penna.

Legal Blanks

SINCE 1908 Burkhart's legal forms—servicing Mid-Cont. oil fields, including Ill. La., Mo., Ind. & Ky. Free catalog & samples. Burkhart Ptg. & Sta. Co., 115 So. Cinn., Tulsa, Okla.

Personal

GEO. W. JOHNSON
Dec. 13, 1898. Roseville, 1936; Smithville, 1937. Your box personal belongings left in California now at Railway Express Agency, Beaumont, Texas. Write there, giving identifictaion.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
10 Lines	3.50	6.00	8.50	11.00

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	1 time	$5.00
1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

COMPLETE KELLOGG CRACKING UNIT

3000 bbl. cap. Kellogg Cracking Unit—Two Furnaces—Pacific Centrifugal Charging Pumps all Complete.

Will sell "as is and where is" or take turnkey job for dismantling and reerection.

Send us your inquiries.

PRICED FOR IMMEDIATE SALE

SONKEN-GALAMBA SUPPLY COMPANY

W. C. Berry or H. J. Galamba,
Riverview at Second, Kansas City, Kansas

Robt. W. Duden,
2100 S. Union, Tulsa, Oklahoma

FOR SALE: Two 6' x 42' Smithweld Pressure vessels with 3" wall. The National Refining Co., Hanna Bldg., Cleveland, Ohio.

FOR SALE

50,000 feet of 2" line pipe.
20,000 feet of 6" line pipe.
Located in Oklahoma.
We also have in Shreveport, Louisiana, a complete stock in all sizes —Line Pipe, Casing, Drill Pipe.
Branches in La-Ark-Tex area; also at St. Elmo, Illinois.
Wire, write or phone.

Louisiana Iron & Supply Company
Shreveport, Louisiana

FOR Sale: Wax presses, chillers, pumps, valves, fittings, boilers, tanks, etc. Attractive prices. Can be inspected at our plant, Marietta, Ohio. The National Refining Co., Hanna Bldg., Cleveland, Ohio.

TRACTORS
Government crawler type Caterpillars, 5 ton $375, 10 ton $695, Slightly used. Perfect condition.

O. C. EVANS
Mt. Sterling, Ky.

FOR SALE

HOUSTON, TEXAS INDUSTRIAL DISTRICT. 27 acres whole or part. Steel shed 75-x300; equipped with 7 ton Milwaukee traveling crane, ideal for oil tool manufacturing plant. Rail, water, highway connections. Further details upon request. Write, phone, or wire: The Vaughan Lumber Co., P. O. Box 1447, Houston, Texas.

FOR SALE: At Oklahoma City—OCS single brake and Grayhound twin brake sand reels. I. T. I. O., Bartlesville, Okla.

FOR SALE OR LEASE—Class E Sanderson Cyclone 1,500-ft. drilling machine located in Ohio. Address Box K-123, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE

48' x 160'—16' Walls, hvy. construction Wisconsin Bridge & Iron Steel Building. 18 and 22 Ga. Galv. Iron. Located at Maud, Okla. $4,000.00 as stands, erected on present location.

48' x 80'—16' Walls hvy. construction Wisconsin Bridge & Iron Steel Building. 18 and 22 Ga. Galv. Iron. Located at Garber, Okla. $2,400.00 as stands erected on present location.

THE NATIONAL SUPPLY CO.
TULSA, OKLA.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.

Terms to suit.

CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

1—7½" and 14—17" Bessemer, 2—5½" 2—7¼", 1—12" and 3—18" Clark, 2—26" Ingersoll-Rand compressor cylinders

NOLAN SALES CORPORATION
Tulsa, Okla. Seminole, Okla.

For Sale—Equipment

FOR SALE: Cummins Diesel Engine, 150 H.P., used very little. Cost $6,000.00, our price $2,400.00. General Machine & Supply Company, Wichita Falls, Texas.

Equipment Wanted

WANTED—Complete skimming plant about 1,500-bbl. cap. Must be reasonable and in first-class condition. H-S-B-1840 W. Wm., Decatur, Ill.

Business Opportunities

WANTED
GAS PROPOSITION

I am reclaiming complete gas property, many miles of pipe from 2" to 12", gas engine driven compressors, orifice and domestic meters, regulators, etc.

Would be interested in attractive propositions in which this material could be used in supplying either domestic or industrial load.

Address with full details,
Box K-164,
The Oil and Gas Journal,
Tulsa, Okla.

FOR SALE—Established oil well servicing business in Illinois Basin. Equipment consists of sixteen well servicing units of standard make mounted on good trucks. Principal work is for major companies. Owners are disposing of this highly profitable business only because of other substantial interests. For further details write Box K-170, The Oil and Gas Journal, Tulsa, Oklahoma.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

California Fields

(Continued from Page 74)

Coalinga

R. S. Lytle, operating for Seaboard Oil Corp., Honolulu Oil Corp. and stockholders of Petroleum Securities Co., completed a flowing well in the Southeast Coalinga field of Fresno County, No. 48-7-F, Section 7-20-16, flowing 2,251 bbl. of 32.1-gravity oil and 1,360,000 cu. ft. of gas from the Gatchell zone, with bottom of the hole at 7,572 ft. Top of the Kreyenhagen was logged at 5,917 ft., top of the green sand at 6,962 ft. and top of the Gatchell zone at 7,014 ft., with the base of the productive Gatchell zone at 7,567 ft. This gives the well a total of 553 ft. of oil sand. Texas Co. was delayed several days with No. 1 Loescher when a boiler exploded in this wildcat north of the productive area in the Coalinga district.

The next 10 days will be important in both the Northeast and Southeast Coalinga fields as outposts in each are to reach the depth at which the pay should either be found or missed. In the northern end of the Southeast Coalinga field, Holly Oil Co. has reached 6,300 ft. in No. 82-12-C in Section 12-20-15, with the pay expected within the next 200 ft. In the Northeast Coalinga field, Bandini Petroleum Co. has reached 7,300 ft. with the pay expected in No. 48-18 Webb within the next 200 ft. and Union Oil Co. is making hole in No. 86-16 Cook at 6,500 ft. with less than 1,000 ft. to go. No. 48-18 Webb of Bandini and No. 86-16 Cook of Union Oil Co. are less than 1 mile west of Amerada Petroleum Corp. discovery well. No. 86-12-C, No. 48-18 Webb and No. 86-16 Cook are important because if commercially productive they will extend their respective fields.

Kern County

In the Canal field, Shell Oil Co. completed No. 25-14-A Kern County Land in Section 14-30-25 flowing 1,188 bbl. of 37.2-gravity oil and 1,037,000 cu. ft. of gas from the Stevens zone with bottom at 8,340 ft., but plugged back to 8,260 ft. This well is along the west side of the Canal field and as the initial flow was coming through a 34/64-in. bean it is capable of much larger production. In the Arvin field of Kern County, Universal Consolidated Oil Co. completed No. 2 Derby in Section 15-31-29 flowing 2,865 bbl. of 29.1-gravity oil from 6,119 ft. and Superior Oil Co. recompleted No. 1 Jewett flowing 1,800 bbl. of 29.1-gravity after the hole had been plugged back from 6,400 ft. to 6,261 ft. No. 2 Derby of Universal Consolidated Oil Co., 158 ft. south of No. 1 Berry of Union Oil Co., was a duster in Section 15-31-29.

In the Coffee Canyon section of the Round Mountain field, Grizzly Bear Oil Co. completed No. 3 Kelley in Section 6-28-29 pumping 73 bbl. of 14.6-gravity from 1,709 ft. but cutting 26 per cent with some question as to whether it would clean up to pipe line limitations of 3 per cent. In the northeastern end of the Edison field of Kern County, Fred Sieman has completed No. 1 Metro in Section 6-30-29 pumping 122 bbl. of 17.2-gravity oil cutting 2 per cent from 4,156 ft. California Exploration Co. No. 1 Salisbury in Section 7-29-24 has been abandoned at 12,989 ft. Top of the Stevens zone was logged at 11,530 ft. but the formation was too tight to produce. Standard Oil Co. has the makings of a good well in the southwestern end of the Greeley field of Kern County as a formation test on No. 12-6 Kern County Land in Section 30-29-26 showed a flow of 1,800 bbl. of 37.1-gravity oil with a cut varying from 10 to 20 per cent. This outpost in the Greeley field of Kern County is bottomed at 11,942 ft. Production is coming from the Rio Bravo zone logged at 11,850 ft. The upper part of this zone was a gray sand carrying gas and the lower part from 11,913 ft. to bottom was a gassy oil sand.

Los Angeles Basin

Thorly Petroleum Co., of which Al Jennings is superintendent, has completed derrick for a deep O'Dea zone test in the Athens section of the Rosecrans field on a 30-acre lease. In the Torrance field, Chanslor Canfield Midway Oil Co. has recompleted No. 12 Kettler after deepening to 5,119 ft. and returned it to production pumping 70 bbl. of 26.9-gravity oil cutting 11 per cent. D. W. Elliott finished his No. 8 Kettler pumping 86 bbl. of 27.2-gravity oil cutting 4 per cent from 5,190 ft. Texas Co. is to drill an offset to Empire Oil Co. No. 1 Samarkand in the Playa Del Rey field.

San Joaquin Basin

Standard Oil Co. completed two commercial gas wells in the Delano gas field of Kern County when No. 2-3 Tulare Farms in Section 35-34-23 was brought in flowing 16,400,000 cu. ft. of dry gas from 2,466 ft. and No. 2-4 Tulare Farms in Section 34-34-23 flowing 10,345,000 cu. ft. of gas from 2,470 ft. In the Kettleman North Dome field, Standard Oil Co. completed No. 83-21-Q in Section 21-22-18, flowing 1,396 bbl. of 37.2-gravity oil and 1,600,000 cu. ft. of gas from the Temblor with bottom at 7,785 ft. In the Shiells Canyon district of Ventura County, Texas Co. has completed No. 137 Shiells pumping 605 bbl. of 26.3 gravity oil per day from 3,272 ft.

CRUDE OIL PRICES

Complete crude price schedules will be published the first issue of each month starting August 3. The last complete schedule was published in the July 13 issue. All changes in crude oil price schedules will be published completely in the first issue following the announcement of the changes. Following are representative crude price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.27
Tepetate, La.	1.03
Smackover, Ark., heavy	.73
Illinois basin	1.05
Pecos County, Tex.	.78
Lance Creek, Wyo.	.77
Bradford, Pa.	2.00

Gravity Schedule

Top prices include all gravities above grades designated and low prices include all gravities below grades designated:

	Signal Hill, Calif.	Oklahoma, Kansas	Gulf Coast Texas
14-14.9	$.80	...	...
15-15.9	.80	...	...
16-16.9	.80	...	...
17-17.9	.80	...	...
18-18.9	.80	...	$.79
19-19.9	.82	...	.79
20-20.9	.85	$.70	.82
21-21.9	.88	.72	.85
22-22.9	.92	.74	.88
23-23.9	.95	.76	.91
24-24.9	.99	.78	.94
25-25.9	1.03	.80	.97
26-26.9	1.06	.82	1.00
27-27.9	1.10	.84	1.02
28-28.9	1.14	.86	1.04
29-29.9	1.17	.88	1.06
30-30.9	1.21	.90	1.08
31-31.9	...	.92	1.10
32-32.9	...	.94	1.12
33-33.9	...	.96	1.14
34-34.9	...	98	1.16
35-35.9	...	1.00	1.18
36-36.9	...	1.02	1.20
37-37.9	...	1.04	1.22
38-38.9	...	1.06	1.24
39-39.9	...	1.08	1.26
40-40.9	...	1.10	1.28

Index to Advertisers

A

Abercrombie Pump Co. 81
Air Reduction Sales Co. .....
Ajax Iron Works .....
Alco Products Division—American Locomotive Company .....
Allegheny Ludlum Steel Corporation .....
Allis-Chalmers Mfg. Co. .....
American Bosch Corporation .....
American Cable Division of American Chain & Cable Co., Inc. ...
American Cast Iron Pipe Company
American Hoist & Derrick Co. ..
American Iron & Machine Works
American Meter Company 10
American Roller Bearing Co. ....
American Sand-Banum Co., The .. 83
American Steel & Wire Company
Armstrong Machine Works .....
Atlas Drop Forge Co. .....
Atlas Imperial Diesel Engine Co.
Auer, C. L. & W. W. 83
Axelson Manufacturing Company

B

Baash-Ross Tool Company .....
Babcock & Wilcox Tube Co., The
Badger & Sons Co., E. B. 8-9
Baker Oil Tools, Inc. .....
Baldwin-Duckworth Chain Corp. .
Bantam Bearings Corp. 73
Baroid Sales Company 67
Barret, William M., Inc. .....
Bastian-Blessing Co., The .....
Beckman, Inc. .....
Bethlehem International Supply Company .....
Bethlehem Steel Co. 1
Billings & Spencer Co., The ....
Braden Steel Corporation .....
Bradford Motor Works, Inc. ....
Brewster Company, The .....
Bridgeport Machine Company 63
Bristol Company, The .....
Broderick & Bascom Rope Co. ....
Brown Instrument Co., The ....
Bruning, Charles Co., The .....
Bucyrus-Erie Company .....
Butler Manufacturing Co. .....
Byron Jackson Co. .....

C

Cable, Jo H. .....
Cameron Iron Works, Inc. 71
Cardwell Mfg. Co., Inc. .....
Carey Company, The Philip .....
Carnegie-Illinois Steel Corporation
Case, J. I., Company .....
Cast Iron Pipe Research Association, The .....
Caterpillar Tractor Co. .....
Central Power & Light Co. .....
Century Electric Company .....
Chain Belt Co., The .....
Chaplin-Fulton Mfg. Co., The ....
Chapman Valve Mfg. Co., The ...
Chemical Process Co., Inc., The ..
Chevrolet Motor Division, General Motors Sales Corporation ....
Chicago Bridge & Iron Company
Chiksan Oil Tool Co., Ltd. .....
Clark Brothers Company .....
Classified Advertising 102-103
Cleveland Trencher Company ...
Climax Engineering Company ...
Climax Molybdenum Company ... 42
Columbia Steel Company .....
Columbian Steel Tank Co. .....
Continental National Bank of Fort Worth .....
Continental Oil Co. .....
Continental-Falk .....
Continental Supply Company, The
Cooper, Fred E. 48
Cooper-Bessemer Corp., The ....
Core Laboratories, Inc. .....
Crane Co. .....
Cummins Engine Co. .....
Curtin, W. H., & Co., The .....

D

Darling Valve & Mfg. Co. .....
Davis Regulator Co. .....
Dayton Rubber Mfg. Co., The ....
Diamond Chain & Mfg. Co. .....
Dodge Mfg. Company .....
Dowell, Incorporated .....
Dragon Mfg. Co., The 51
Dresser Mfg. Co. .....
Du Pont de Nemours & Co., Inc.

E

Eagle Picher Lead Co. 3
Eastman Oil Well Survey Co. ....
Economy Electric Lantern Co. ...
Edward Valve & Mfg. Co., The ..
Emsco Asbestos Company .....
Emsco Derrick & Equipment Company .....
Enardo Foundry & Mfg. Co. .....
Ensign Carburetor Company, Ltd.
Ethyl Gasoline Corporation .....
Evansville Chamber of Commerce
Evinrude Motors .....

F

Failing, George E., Supply Company .....
First National Bank of Fort Worth .....
First National Bank in Houston ..
First National Bank & Trust Co. of Tulsa, The .....
Fisher Governor Company 55
Fluid Packed Pump Co. .....
Fluor Corporation, Ltd., The .....
Ford Motor Co. .....
Fort Worth Chamber of Commerce .....
Fort Worth Clearing House Association .....
Fort Worth National Bank, The ..
Foster Wheeler Corp. .....
Foxboro Co., The .....
Franks Manufacturing Corp. .....
Frick-Reid Supply Corporation ..

G

Gardner-Denver Company .....
Garlock Packing Company, The ..
Gaso Pump & Burner Mfg. Co. ..
Gasoline Products Co., The .....
Gates Rubber Co., The 56
Gatke Corporation .....
General American Transportation Corporation—Terminal Division
General Electric Company .....
General Paint Corporation .....
General Power, Inc. .....
Geological Scientific Service Company, Inc. .....
Geophysical Service, Inc. 45
Gilmer Company, L. H. .....
Gilmore Wire Rope Division of Jones & Laughlin Steel Corporation .....
Girdler Corporation, The .....
Goodall Rubber Co. .....
Goodrich Co., B. F., The .....
Goodyear .....
Gott, H. P., Mfg. Co. .....
Graver Tank & Mfg. Co., Inc. ....
Gray Processes Corporation, The .
Guiberson Corporation .....
Gulf Oil Corp. .....
Gulf States Utilities Co. .....
Gustin-Bacon Mfg. Co. .....

H

Halliburton Oil Well Cementing Co. ..... Inside Front Cover
Hanlon-Buchanan, Inc. 12
Harnischfeger Corporation .....
Harrisburg Steel Corporation ....
Hazard Wire Rope Division of American Chain & Cable Co., Inc. .....
Heiland Research Corporation ...
Hewitt Rubber Corp. .....
Hill-Hubbell & Co. .....
Hoard Exploration Company ....
Houston Lighting & Power Company .....
Hughes Tool Co. ..... Back Cover
Humble Oil & Refining Co. .....
Hunt Tool Company .....
Hydril Co. .....

I

Independent Exploration Company
Inferno Co., The 64
Ingersoll-Rand Co. .....
International Derrick & Equipment Co., The .....
International Geophysics, Inc. ....
International Harvester Co. 41
International Nickel Company, Inc., The .....
International Petroleum Exposition .....

J

Jarecki Manufacturing Company 7
Jensen Brothers Manufacturing Co. .....
Jerguson Gage & Valve Co. 51
Johns-Manville Corporation 81
Jones & Brooks, Inc. .....
Jones Company, S. M. .....
Jones & Laughlin Steel Corporation .....
Jones-Shelburne, Inc. .....

K

Kellogg, M. W., Company, The ..
Kennedy Valve Mfg. Co., The ...
Kerlow Steel Flooring Co. .....
Keuffel & Esser Co. .....
Key Company .....
Keystone Driller Co. .....
Kinzbach Tool Co. .....
Kobe, Incorporated .....
Krupp .....

L

Landis Machine Co., The .....
Lane-Wells Co., The .....
Larkin Packer Company, Inc. ..... Inside Back Cover
Layne and Bowler Co., The .....
Layne & Bowler, Inc. .....
Leeds & Northrup Co. .....
Leland Equipment Co. .....
Lennox Hotel 83
Le Roi Company .....
Leschen, A., Sons Rope Co. ....
Lincoln Electric Company, The ..
Line Scale Co., Inc. .....
Link-Belt Company .....
Lockheed Aircraft Corporation ..
Lone Star Cement Corporation ..
Lonergan, J. E., Co. .....
Ludlow Valve Mfg. Co., The 53
Lufkin Foundry & Machine Co. ..
Lufkin Rule Co., The .....
Lummus Co., The .....
Lunkenheimer Co., The .....

Mc

McGregor Working Barrel Company .....
McKee, Arthur G., & Company ...
McKissick Products Corp. 68

M

MacClatchie Manufacturing Company .....
Macwhyte Co. .....
Magnolia Airco Gas Products Co.
Maloney Tank Mfg. Co. ..... Front Cover
Manhattan Rubber Mfg. Division
Marley Company, The .....
Marmon-Herrington Co., Inc. ....
Marsh, James P., Corp. .....
Martin-Decker Corp. .....
Mathey Machine Works, C. A. ..
May, George S., Company .....
Mayfair Hotel .....
Medart Company .....
Merco Nordstrom Valve Co. .....
Meria Tool Co. .....
Meehanite Research Institute ....
Metric Metal Works 10
Midco Bailer Co. .....
Midco Tool & Supply Co. .....
Mid-Continent Pump Supply Company .....
Mid-Continent Supply Co. .....
Midwest Piping & Supply Company, Inc., The .....
Miller Sand Pump Co., The ....
Mission Mfg. Co., The .....
Mudrite Products Co. .....
Murphy Diesel Company .....

N

National Bank of Tulsa .....
National Carbon Co., Inc. .....
National Geophysical Co. .....
National Lead Company .....
National Supply Co., The 75
National Transit Pump and Machine Co. .....
National Tube Co. .....
New Bedford Cordage Co. 64
New Deal Specialty Co., The ....
Newman, Hender & Co., Ltd. ....
Nitrose Company, Inc., The .....
Novo Engine Co. .....

O

O'Bannon Co., Walter .....
Oil Center Tool Co. .....
O.C.S. Mfg. Co., The .....
Oil Well Mfg. Co. .....
Oil Well Supply Company 47
O-K Machine & Manufacturing Co.
Osage Metal Company .....
Oster Manufacturing Company ..
Otis Pressure Control, Inc. .....

P

Pacific Pump Works .....
Page Fence Association .....
Page Steel & Wire Division of American Chain & Cable Co. .. 6
Parkersburg Rig & Reel Co. .....
Parkhill-Wade .....
Patent Fuels and Color Corp. ....
Patterson-Ballagh Corporation
Peerless Pump Division of Food Machinery Corp. 64
Penberthy Injector Co. .....
Pennsylvania Grade Crude Oil Association .....
Perco, Inc. .....
Petroleum Advisers, Inc. .....
Petroleum Electric Power Association .....
Petroleum Rectifying Company ..
Petty Geophysical Engineering Company .....
Phelps Dodge Refining Corporation .....
Photogrammetrie .....
Pittsburgh-Des Moines Steel Company .....
Pittsburgh Equitable Meter Co. ..
Pittsburgh Steel Company 79
Plymouth Cordage Co. .....
Pomona Pump Co. 65
Portable Rig Co. .....
Powell, Wm., Co. .....
Price Co., H. C. .....
Pritchard, J. F., & Co. .....
Producing Equipment Directory 58
Pure Oil Co. .....

R

Reading-Pratt & Cady Division of American Chain & Cable Co., Inc. .....
Rector Well Equipment Co., Inc.
Reda Pump Co. .....
Reed Roller Bit Company 65
Regan Forge & Engineering Co.
Reilly Tar & Chemical Corporation
Republic Rubber Division of Lee Rubber & Tire Corp. .....
Republic Steel Corporation .....
Roebling's Sons Company, John A.
Ryerson & Son, Inc., Joseph T. ... 83

S

St. Joseph Forward Association ..
Schlumberger Well Surveying Corporation .....
Security Engineering Co. .....
Seismic Explorations, Inc. .....
Seismograph Service Corp. .....
Shafer Bearing Corporation .....
Shaffer Tool Works .....
Shand & Jurs Co. .....
Shell .....
Sinclair Refining Company .....
S.K.F. Industries, Inc. .....
Skinner Co., M. B. .....
Smith, A. O., Corporation 5
Smith Company, E. M. .....
Smith, H. C., Oil Tool Co. 64
Smith Company, Howard .....
Smith Meter Company .....
Smooth-On Mfg. Co. .....
Socony-Vacuum Oil Co. .....
South Chester Tube Co. .....
Southwestern Gas & Electric Company .....
Spang Chalfant, Inc. .....
Spang & Company, Inc. .....
Spartan Aircraft Company .....
Sperry-Sun Well Surveying Co. ..
Spicer Mfg. Corp. .....
Standard Brake Lining Co. 64
Star Drilling Machine Company ..
Stearns-Roger Manufacturing Co.
Steel Founders' Society of America .....
Subterrex .....
Swartz, Stephen .....

T

Taylor Forge & Pipe Works 51
Taylor Instrument Companies ...
Technical Oil Tool Corporation ..
Texaco Development Corporation 52
Texas Company, The .....
Texas Iron Works .....
Thermoid Rubber .....
Thornhill-Craver Co., Inc. 65
Timken-Detroit Axle Co. .....
Timken Roller Bearing Company
Timken Roller Bearing Company Steel and Tube Division 2
Toledo Pipe Threading Machine Co., The .....
Tretolite Co. 4
Trinity Portland Cement Company
Tubbs Cordage Co. .....
Tube Turns, Inc. .....
Tulsa Boiler & Machinery Co. ....
Tulsa Chamber of Commerce ....
Twin Disc Clutch Co. .....

U

Union Wire Rope Corporation ...
Unit Rig & Equipment Company
United Geophysical Co. .....
United States Rubber Company
United States Steel Corp., Subsidiaries .....
United States Steel Products Company .....
Universal Atlas Cement Co. 37
Universal Exploration Co. .....
Universal Oil Products Co. 38

V

Viking Pump Co. .....
Visco Products Company .....
Vogt, Henry, Machine Co. .....

W

Wall Rope Works, Inc. .....
Walworth Co. .....
Warren Petroleum Corporation ..
Watson-Stillman Co., The .....
Waukesha Motor Co. .....
Well Equipment Mfg. Corp. .....
Westcott Valves .....
Westinghouse Electric & Mfg. Co.
Weston Electrical Instrument Co.
Whitney Chain & Mfg. Co., The
Wickwire Spencer Steel Company
Williams & Co., J. H. .....
Wilson Manufacturing Co. .....
Wilson Supply Co. .....
Witte Engine Works
Worthington Pump & Machinery Corporation .....
Wyatt Metal & Boiler Works ....

Y

Young Engine Corp. .....
Youngstown Sheet & Tube Co. ..

Z

Zink Burners, John .....

The Oil Man's Calendar appears on Page 32